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A Job for All of Us

MOST textile manufacturers, in common with other citizens, are wondering "what Congress is going to do."

Strangely enough, for a so-called democracy, the country at large seems to consider the solution of its national and international problems as completely removed from its jurisdiction, and placed in the hands of a group of Congressmen.

In this transfer of responsibility, no thought apparently is given to the power of public opinion. And yet, possibly never before in our history has that factor exerted greater influence than during the last two years, and possibly never before has it been so potentially important as it is at the opening of the present session of Congress.

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The dominant note today is, quite naturally, one of discontent, of rebellion against the Administration. Equally naturally, that discontent and that rebellion have taken a blind form. Feeling the pinch of unemployment and financial stringency, a people tends to be destructive rather than constructive.

This attitude, in turn, affects the thoughts and actions of Senators and Representatives. It strengthens those whose party affiliations prompt them to think, not of the national emergency, but instead of the forthcoming 1932 election.

President Hoover, in his annual message, presented, we feel, a fair picture of that emergency and, in general, of the way out. This seems particularly true when one remembers that the President is charged with the maintenance of the financial stability of the country, just as the president of a textile manufacturing company has as his first responsibility the solvency of his organization. In each case, the executive is the target for criticism from those individuals who analyze all acts in the light of their own interests, rather than in the light of the good of the whole.

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However, we emphasize this fact not as a brief for the Administration nor in the belief that the program outlined by the President is, in toto, the program which should be accepted by Congress and enacted without dissension.

Instead, our purpose is to decry the intentions of those who, for party reasons whether Democratic or Republican, are threatening the possibility of constructive action by Congress and, at the same time, inviting the passage of laws based upon political expediency or upon class interest. Typical of this group is the Democratic Senator whose contribution was this sentence: "The President's message was a total blank."

The 1932 election is of course important, but far more important is our present economic situation. If Congress does not do its best, in a non-partisan manner, to correct that situation by wise, positive action and equally wise negative action, the winners next fall will, like all of us, be losers.

To guard against that catastrophe, a revised public opinion, purged of blind, destructive criticism and of self-interest, is immediately necessary.

The Week in Textiles

as Reflected in This Issue

General

Textile Industry's Major Trends

In a paper delivered before the American Vocational Association, Douglas G. Woolf, editor, TEXTILE WORLD, summed up the major trends in the industry as follows: Increased flexibility in raw material and machinery, improved application of labor to machine operation, greater recognition of importance of merchandising factor, and development of cooperative agencies to insure better coordination of all phases. *(page 26)*

Year's Technical Progress

A review of the year's technical developments in all major branches of the textile industry is contained in the Annual Progress Report prepared by the Textile Division of American Society of Mechanical Engineers. *(page 37)*

Electric Warp Stop Motion

Announcement is made of the development of a new and improved electric warp stop motion. Objectionable features found in previous types are said to be overcome, and provision is made for stopping the loom in any desired position. *(page 49)*

Cotton

23% Sets the Pace

From a study of age and condition of cotton spindles in the United States, it is concluded that 23% of them are so distinctly superior in design and performance that they unquestionably fix the standards of operating performance and costs for whole industry. *(page 24)*

Stabilization Committee

James C. Self, president, Greenwood (S. C.) Cotton Mills, was elected chairman of a special committee to develop plans for stabilizing the print cloth market, at a conference between converters and print cloth manufacturers in Greenville, S. C., late last week. This excursion of buyers in the interests of stability is almost unique in the annals of the cotton goods market. *(page 28)*

N. C. Mill Men Meet

Progressive leaders of the textile industry who have cooperated with the industry's program during recent months deserve the support of strong public opinion according to Dr. F. P. Graham, president of the University of North Carolina in an address before the winter meeting of the Cotton Manufacturers Association of N. C. *(page 33)*

Yarn Cleaning Device

Recent improvements in a standard make of yarn cleaning device have rendered this contrivance more efficient. *(page 49)*

Back-Filled Cotton Sheeting

Voids or unfilled interstices found in back-filled cotton sheeting may result from uneven application of the sizing solution. Many factors govern the degree of evenness. *(page 50)*

Strength of Ply Yarns

A formula for determining the strength of a ply yarn when the strength of the single is known is supplied. *(page 51)*

Heavy Cotton Market

A heavy market with considerable selling of futures followed the cotton crop estimate of 16,918,000 bales announced last Tuesday. *(page 57)*

Yarns Dull and Erratic

The cotton yarn market has been called dull and erratic this week. Buyers are unwilling to consider purchases outside of small lots to go right on to their machines. *(page 57)*

Sentiment in Cottons Improves

Greater confidence in cotton goods was reported this week as several houses withdrew print cloths from sale or made blanket advances in price of $\frac{3}{8}$ to $\frac{1}{2}$c. which was equivalent to withdrawal. The turn follows the visit of leading converters to the South to urge stability on mill men. Going prices are not much improved nor is trade more active, but tone is better. *(page 61)*

Wool

Intersecting Gills

It is pointed out that Bradford spinners have long entertained the idea that the intersecting gill box was designed for the exclusive use of the Continental system of worsted yarn manufacture. That this is not true and that this machine may be used to good advantage in the English system is apparently just being realized. *(page 37)*

Little Hope for Wool Rise

Dr. L. H. Haney, writing in this week's TEXTILE WORLD Analyst foresees little chance for a rise in raw wool prices. "Further ease," he says, "is likely during the next month or two." He adds that yarn and cloth prices do not appear to have completed their downward readjustment. *(page 53)*

The Textile Outlook

ATTENTION is being turned with unusual interest to probable textile market conditions after the turn of the year. It is remembered that many divisions came out of the slough of a despondent last quarter in 1930 to a fairly good first quarter in 1931, and merchants are wondering whether history will repeat itself. In many lines distributors' stocks are lower than they were a year ago but there will be no hasty replenishment until the consumer shows his attitude. The pace during the next few months will doubtless be set by consumer operations, excepting where hotheaded price competition may stir up wholesale circles. Margins are slim to efficient mills and absent with the rank and file of manufacturers and with a background of losses it is probable that greater price stability will be developed. Buyers themselves have taught sellers that stability and confidence are two essentials to better business and if an old dog can learn even part of a trick, textiles should reflect greater firmness as time goes on. Cottons were a bit steadier this week; wool goods moved better because of cold weather; silks were very quiet and knit goods are turning more attention to spring lines.

Yarn Margins Pinched

Worsted yarns are meeting an indifferent market. Spinners are caught between firmer wool prices and uncertain yarn values with the result that their margins are being pinched even more than usual. *(page 57)*

Wools Hold Steady

Wools are holding their own in a quieter market. There is again pressure from buyers for concessions but dealers are holding firm. *(page 59)*

Mercury Falls; Fabric Sales Rise

Colder weather has spurred demand for men's wear worsteds, and while orders are mostly of fill-in type, market is encouraged. *(page 61)*

Knitting

That Mythical "100 Gauge"

Clarification of the meaning of numbers used in description of hosiery gauges explodes the myth of "100 gauge" goods. *(page 43)*

Rusty Needles in Knitting

The various causes of the development of rust on silk knitting needles are discussed, and preventive measures are outlined. The cause and remedy of mildew is taken up. *(page 50)*

Streaks in Knit Fabric

Streaks arising from uneven yarns in rib-knit fabrics may be more pronounced on the back of the cloth than on the face, due to the fact that the wales appear tighter. *(page 50)*

Hosiery Christmas Not So Merry

Hosiery sales for holidays have ebbed after a brief and disappointing season and industry looks to spring plans. *(page 63)*

Swim-Suit Sales Below 1930

Bathing-suit orders for 1932 to date are well below this time last year, and caution in production during first quarter is advised. *(page 63)*

International Newsreel

More fleece than goat—"Van Duesen of the Redwood Empire" owned by F. A. Pierce of Humboldt County, Calif., an angora goat with a record of producing 60-inch staple mohair.

Silk

Silk and Rayon Terms

In an attempt to eliminate the confusion caused by misinterpretation of silk and rayon terms, a set of tentative definitions has been proposed for adoption as standard by the industry. Readers are urged to criticise these definitions from their own understanding of the terms. *(page 34)*

Raw Silk Faces Weak Month

Raw silk is weak and due for further declines but importers are confident of sharp gain in January. *(page 59)*

Spun Silk Improves

Wool goods mills and underwear knitters are active buyers of spun yarn. Thrown silk quiet. *(page 59)*

Fabric Call Stresses Price

Price is emphasized in current spot call for spring prints and some broad-silk mills are sacrificing to liquidate for inventory. *(page 61)*

Rayon

Salvage Urges Stable Prices

Samuel A. Salvage, president of Viscose Co. of America, reviews rayon outlook for 1932 and stresses stability as most essential element; would regard "any price change as bad for the industry." *(page 29)*

Crepe Weavers Buying Yarn

Increased activity among weavers has spurred call for crepe yarns and while general movement is light, outlook for new year is good. *(page 59)*

Processing

Chemists Urged Toward Research

The value of textile research was stressed at the annual meeting of the American Association of Textile Chemists and Colorists at its annual meeting in Boston Dec. 4 and 5, by Dr. Compton, president of Massachusetts Institute of Technology. *(page 30)*

Sanforizer

Announcement is made of a new preshrinking unit in which unnecessary parts have been eliminated and several improvements effected. *(page 48)*

The Business Outlook

MOST disturbing detail of a dismal week is the indifferent, almost stupid, response to the fundamental, hopeful and necessary measures of reconstruction suggested in the President's message. This indicates the degree of demoralization of public opinion produced by the persistent decline of business activity, renewed weakness in commodity prices and establishment of new low levels in security markets as December sets in. Continued delay in automotive demand, and price uncertainties, are letting steel activity down into the usual year-end slump, and most indicators except power production appear to be making up for the unseasonal bulge in October by more rapid seasonal recession during December. The European picture, particularly in Germany, begins to take on the crazy appearance of the Cabinet of Dr. Caligari, in which it becomes impossible to distinguish the sane from the insane. Americans may well ponder the immense implications of the neurotic nationalism that is emerging in Europe in bitter tariff wars, and the forced reduction of interest rates by edict in Germany. Our security markets are undoubtedly being unreasonably infected by the imbecilities abroad.—*The Business Week.*

23% of Cotton Spindleage Will Set Pace

for the Obsolescent Remainder

◆ *"Much of the equipment in textile mills is obsolete." . . . This statement, made repeatedly in recent years, is undoubtedly true. But, unfortunately, it is one of those generalities which are at once impossible to refute and difficult to confirm specifically. To the question, "Just how much is obsolete?" there is usually no answer.*

Some months ago Henry G. Lord, who was studying the problem of financing the purchase of machinery through long-term credit, discussed with various authorities what proportion of the mills might be considered as thoroughly up-to-date and reached the conclusion that not over 10% would qualify for Class A rating, and that about 30 to 40% were in Class B, while 50 to 60% might be rated as Class C. The results of an interesting research study, conducted by another observer and published below, give a more definite picture based on age of machinery and to a considerable extent confirm Mr. Lord's findings, although the age of the machinery is not the only factor of efficiency.

The conclusion reached in the following study is arrived at by a process of reasoning which, while not destined to produce a result correct within a minute numerical tolerance, is, we feel, so sound as to reflect accurately the fundamental facts.—Editor.

EIGHT million cotton spindles, or 23% of the total spindleage in place in this country at the end of 1930, are so distinctly and definitely superior in design and performance to the remaining 26,000,000 that they will unquestionably fix the standards of operating performance and costs for the industry as a whole, and therefore ultimately fix the price at which cotton goods will be sold when other factors, responsible for competitive demoralization, have been stabilized.

This is the extremely vital and significant conclusion reached as the result of a study of the age and condition of cotton spindles in the United States.

From this conclusion, is made the further deduction that the prices for cotton goods will ultimately stabilize at those levels made possible by the costs which can be obtained by the more modern and efficient equipment, and this, in turn, means that those mills which cannot reach these lower costs because of inferior equipment *will gradually be eliminated from the competitive race.*

The method by which these conclusions were developed is outlined below:

This analysis is based on the figures showing spindles in the United States beginning with the year 1840 (see Table I). The figures are shown for each year from 1880 on. Prior to 1910 no figures are found which differentiate accurately between "Active Spindles" and "Spindles in Place." Up to 1910 the practice was to report spindles active at some time during the year. These were called "Active Spindles." Beginning in 1910 figures as to spindles in place are consistently somewhat larger than the active spindles reported. From 1910 on these figures as to spindles in place are shown at sufficiently frequent intervals to permit of comparison with the active spindles.

If I correctly understand your inquiry, you want to find out as accurately as possible the age of the spinning frames used by the industry today. This would be comparatively simple except for the difficulty of determining what portion of the new spindles built went into new mills and extensions to existing mills as compared with the portion which went into the replacement of worn-out and discarded equipment. I can give you what I believe to be a very close and reasoned approximation to the facts.

From Table I it will be noted that there were nearly 29,000,000 spindles in place in 1910. All of these spindles were of the old-fashioned, hand-drive type. Spinning frames in place on that date were very definitely inferior in design, construction and performance to the spinning we are building today. It is perfectly fair to say that any spinning which was in place in 1910 is to a large extent obsolete and ready for replacement today. This is particularly true when we consider the extent to which a large part of this spindleage has been run day and night during the 1917 to 1930 period.

The spindleage in place in the United States reached its peak in 1923, with a round figure of 37,400,000. This represents an increase of spindles in place of about 8,400,000 during the 13-year period, 1910 to 1923, an average annual increase of about 650,000 spindles. Note particularly that for purposes of this calculation these 650,000 spindles, added each year to the industry's equipment during the period 19.. to 1923, did not displace any of the 29,000,000 in place in 1910. They were a net addition to the total spindleage in place in 1910.

The unknown quantity in our calculation is the number of new spindles built and installed by the shops during this period in excess of the 650,000 spindles per year added to the industry's total equipment and which aggregated for the 13-year period about 8,400,000 spindles.

We have ascertained the figures as to the number of new spindles built and installed in the United States by all the shops for the 5-year period, 1925 to 1929, as follows:

1925	343,292 spindles	1928	255,912 spindles
1926	217,264 spindles	1929	320,784 spindles
1927	496,192 spindles	Average	326,688 spindles

From the foregoing table it will be seen that the total new spindles for this 5-year period showed an average of 326,000 per year and the highest figure for any one year (namely 1927) was a little less than half a million spindles. There are no exact figures for 1924 and 1930, but it is quite certain that the average annual output of new spindles by all the shops for installation in the United States during the 7-year period from 1923 to 1930 was decidedly less than 350,000 spindles per year. Most of this production from 1923 to 1930 went into the replacement of old spindles, but an appreciable part of it, at least a good many hundred thousands of spindles, went into new mills or new extensions to existing mills. It would be reasonable to say perhaps that for the 7-year period, 1923 to 1930, 300,000 old spindles have been replaced each year by new spindles, making a total of replacements for the 7-year period of around 2,000,000 spindles. Practically all of these 2,000,000 replacement spindles displaced an equivalent number of spindles in the total of

29,000,000 that were in place in 1910, leaving, in round figures, 27,000,000 of the old 1910 spindleage to be accounted for.

The job now is to estimate as closely and accurately as possible from the data available the number of spindles produced during the period 1910 to 1923 in excess of the 650,000 per year for that period which went into new mills and extensions to existing mills and represented a net addition to the industry's total spindleage in place. From various kinds of evidence available it can safely be stated that the average annual production of new spindles for installation in the United States during this period by all the shops did not exceed 900,000 spindles per year. There were some years when the total production undoubtedly exceeded a million spindles, but during the period from 1912 on, the American shops exported many hundred thousands of spindles, notably to China and South America. The total of these exports exceeded a million spindles for the period.

Since we know absolutely that the total production of new spindles for installation in the United States during the 7-year period, 1923 to 1930, did not exceed 350,000 spindles a year, it seems reasonable (in fact the estimate is very liberal) to say that for the 13-year period, 1910 to 1923, the output of new spindles going into mills of this country did not exceed 900,000 spindles per year. Since we know from the figures in Table I that 650,000 of these 900,000 spindles represented net additions to the industry's total spindle equipment, we arrive at a figure of 250,000 new spindles which represented replacements of old spindles in use in 1910. Multiplying this estimated figure of 250,000 replacement spindles by 13 we get a figure of 3,250,000 as the number of old spindles discarded and replaced by new spindles during the 13-year period, 1910 to 1923. Adding to this this approximately 2,000,000 spindles estimated to have been replaced during the 7-year period, 1923 to 1930, we get a total replacement figure for the 20-year period, 1910 to 1930, of 5,250,000 spindles, which undoubtedly is distinctly on the high side rather than low side of the actual facts. Deducting this figure of 5,250,000 of replacement spindles from the figure of 29,000,000 spindles in place in 1910, we arrive at a figure of 23,750,000 of old spindles in place in 1910 still to be accounted for.

The estimated figures we have used thus far indicate that during the 20-year period, 1910 to 1930, there was a total of about 14,000,000 of new spindles built and installed in the mills of this country. In 1930 the total spindleage in place was about 34,000,000. Assuming that all of the spindles built and installed since 1910 are still in place and deducting this 14,000,000 of spindles installed since 1910 from the 34,000,000 in place at the end of 1930, we arrive at a figure of 20,000,000 as the number of old spindles in place in 1910 which are still in place and not yet scrapped. This figure is 3,750,000 less than the number of old spindles in place in 1910 left to be accounted for in the preceding paragraph. This difference of 3,750,000 is pretty close to the difference between the spindleage in place at the end of 1930 and the peak spindleage of 37,400,000 in place in 1923. The difference between the 1923 and the 1930 figures is 3,400,000 which figure represents a net shrinkage in the total spindleage of the country due to outright scrapping not compensated for by replacement with new spindles.

It is reasonable to assume that this shrinkage of 3,400,000 spindles since 1923 occurred almost entirely in the old spindleage that was in place in 1910. This calculation gives us a further check on the figure of approximately 20,000,000 as the number of old 1910 spindles still in place, and we may accept this figure as being at least an intelligent approximation to the facts. It is an appallingly large proportion (nearly 60%) of the total spindleage in place today.

On the basis of these figures it would appear that certainly more than 50% of the spinning frames in place today are obsolete in design, largely worn out, and urgently in need of replacement. This condition and this need are becoming increasingly acute each year that goes by, and disaster lies not very far ahead for many of the mills in the country unless they recognize the immediate and imperative necessity for extensive replacements and find means to make them.

On the other hand, we must also recognize that the 14,000,000 new spindles installed since 1910 are mostly still in operation today. Rather more than half of these, or upwards of 8,000,000, are probably tape-drive spinning. Tape-drive was first introduced about 1911 or 1912 and during the ensuing three or four years was generally accepted by the industry as a long step forward in spinning frame design. There is also a total of approximately 3,000,000 spindles of long-draft spinning running today and this long-draft spinning is unquestionably far superior to the old standard three-roll spinning and particularly superior to the old spinning that was in place in 1910. In other words, the point is that there are in place and in operation today at least 8,000,000 spindles which are distinctly and definitely superior in design and performance to the remaining 26,000,000 of the industry's total spindleage in place at the end of 1930 as shown in Table I.

These 8,000,000 spindles (23% of the total spindleage) under the severely competitive conditions prevailing today will unquestionably fix the standards of operating performance and costs for the industry as a whole, and therefore ultimately fix the price at which cotton goods will be sold when other factors, responsible for competitive demoralization, have been more or less stabilized. To put it another way, the prices at which cotton goods can be sold, when other factors responsible for the competitive demoralization have been stabilized, will be fixed by the production costs possible of accomplishment with these 8,000,000 of better spindles rather than by the production costs possible of accomplishment with the largely obsolete and worn-out equipment which makes up so great a proportion of the industry's total plant. If this statement is well founded, the significance of it is that the prices for cotton goods will ultimately stabilize at those levels made possible by the costs which can be obtained by the more modern and efficient equipment, and this, in turn, means that those mills which cannot reach these lower costs because of inferior equipment will gradually be eliminated from the competitive race.

"Disaster lies not very far ahead for many of the mills in this country unless they recognize the immediate and imperative necessity for extensive replacements and find means to make them."

Table I—Spindles in United States

Year	Active Spindles	Year	Active Spindles
1840	2,285,000	1909	28,018,000
1850	3,998,000	1910	28,267,000
1860	5,236,000	.....	28,929,093*
1870	7,132,000	1911	29,523,000
1880	10,653,000	1912	30,579,000
1883	12,660,000	1913	31,520,000
1884	13,300,000	1914	32,107,000
1885	13,375,000	1915	31,964,000
1886	13,400,000	.....	32,840,730*
1887	13,500,000	1916	32,806,000
1888	13,550,000	1917	33,885,000
1889	14,060,000	1918	34,543,000
1890	14,384,000	1919	34,931,000
1891	14,640,000	1920	35,481,000
1892	15,200,000	.....	35,834,463*
1893	15,550,000	1921	36,047,000
1894	15,700,000	1922	35,708,000
1895	16,100,000	1923	36,260,000
1896	16,650,000	.....	37,408,689*
1897	17,150,000	1924	35,849,000
1898	17,450,000	1925	35,032,000
1899	18,100,000	1926	34,750,000
1900	19,472,000	1927	34,410,000
1901	20,200,000	.....	36,695,516*
1902	21,400,000	1928	33,570,000
1903	22,000,000	.....	35,539,956*
1904	22,850,000	1929	32,417,000
1905	23,687,000	.....	34,819,534*
1906	25,250,000	1930	31,245,000
1907	26,375,000	.....	34,024,866*
1908	27,505,000		

*Spindles in place. "Active Spindles" mean spindles reported as active at some time during the year.

Textile Industry Substituting Conscious Planning *for Opportunism*

By Douglas G. Woolf

Editor, TEXTILE WORLD

◆ *Paper presented at textile session of annual convention of American Vocational Association. New York, Dec. 12. Story of meeting will be published in next week's issue of* TEXTILE WORLD.

WHEN it was first suggested to me that I discuss "Some Significant Trends in the Textile Industries," the task seemed an easy one. With the industry in a condition of unprecedented mobility, the wealth of subject-material was almost embarrassing.

In fact, it was embarrassing. I soon encountered two major problems. One was the problem of elimination. Of the multiplicity of current trends, which are really significant? Which are merely transient—the products possibly of an abnormal world condition?

The second problem was one of coordination. A "trend," the dictionary tells us, is a "general course or direction, as in movement toward a particular point." Has each of the many "significant trends" its own particular endpoint—or is there a general directional character common to all?

Unless I can answer that question, a cataloging of textile trends will merely be confusing. Fortunately for my peace of mind, I feel that I sense such relativity.

Briefly, the revolution now going on within the textile industry—for it *is* a revolution—is, in my opinion, removing that industry from the opportunist class and placing it in the class where conscious planning plays a part.

Although I am afraid that statement by itself is somewhat obscure, I hope it will become less so before I finish. Now, what are the major specific trends which, in turn, have this general trend in common?

Raw Materials

Logically, we must start with the raw material. And, equally logically, we must confine ourselves, in the limited time available, to the outstanding development at that end: synthetic fiber manufacture.

Not much more than a decade ago, what was then called "artificial silk" was an altogether inconspicuous member of the textile family. In fact, as I recall the neckties and sweaters knitted from that material, I would say that it was deservedly so.

Today, rayon and other synthetic fibers are produced in such a wide range of types, and possess such vital qualities of strength, appearance and usability that they enter every division of the industry—and nearly all products of each division.

To bring this about, there has been compressed into those ten years an aggregate of manufacturing and merchandising initiative unequalled, I believe, in any other similar period on any one phase of textile manufacture. The yarn producers themselves; the weavers, knitters and processors; the designers, stylists and merchandisers —have all contributed to the resultant expansion of production, acceptance and utility.

No estimate of the future in the textile industry can be complete without consideration of the still larger part synthetic fibers may play. It is not beyond the realm of possibility, or even probability, that in the course of time—say 50 or 100 years—man-made fibers may largely replace natural fibers, just as synthetic dyes have practically eliminated natural coloring matters. And here is a significant point: When I made that statement several years ago, it was generally accepted as a joke. When I make it to textile men today, they may not be convinced but, with very few exceptions, they admit the possibility and evince a determination to keep abreast of developments in that field. This is an example, I believe, of the passing of opportunism.

Machines

When we come to the machines which fabricate and process textile materials, it is not so easy to isolate one outstanding or typical development as it is in the case of the fibers themselves. Just to list the new machinery and processes of the last five years would require the rest of the morning. But here, too, there is one major trend in common. The primary objective seems to be shortening of the route between raw material and finished product—whether it be by elimination or consolidation of intermediary steps, by speeding up of individual machines, or by placing consecutive processes in range. Such developments as single process picking, long-draft spinning, high-speed warping, continuous bleaching, range finishing, full-fashioned hosiery production on a single machine, all fit into that general picture.

Five or more years ago, members of the industry got considerable merriment out of the idea of "Fordizing" the textile industry. As it turned out, Henry Ford did not do the job—possibly because just about that time he decided to do some research on his Model T. However, the industry itself, through its machinery manufacturers and its plant managers, are doing their own Fordizing—and in a far more conscious and well-ordered manner than they themselves may realize.

The industry has weakened in its belief that the textile equipment of today, despite the marvelous ingenuity that has gone into its making, is necessarily the textile equipment of tomorrow. The recent announcement of the manufacture of a non-woven floor-covering with a pile surface like a Wilton carpet, induced thoughtfulness, not ridicule, reflecting a new attitude of receptivity.

Production Methods and Industrial Relations

So much for materials and machinery, as such. The methods by which both new and old machines convert

both new and old fibers in mill operation, are in as great a state of flux as are the equipment and the raw materials themselves. Here, however, a human problem is involved.

Lacking the time to analyze the situation, I must confine myself to the statement that textile manufacture is a low-wage industry, and that far-seeing mill men are only too conscious of that fact. Unfortunately, there is no immediate solution of this problem. A glance at the financial statements of most textile companies will demonstrate that manufacturers are not grinding riches out of the sweat and blood of poorly-paid operatives. No financial wizard has yet devised a method of transforming non-existent "profits" into extra dollars in the pay-envelope.

A slow process of reconstruction is the only answer. In a broad sense, this involves industry-wide activities which I shall mention later. In a more specific sense, it involves the utilization of the science of mill management.

In our industry, the actual method employed has been variously termed "labor specialization," "labor extension," "stretch-out," etc. Many sins have been committed under all these names. But the basic idea is a sound one. By re-routing and re-apportioning mill jobs, skilled workers are enabled to exercise their skill more efficiently and effectively—and to produce more goods per hour, with corresponding return to the company and the employee.

That, I say, is the ideal. Into its application must go a combination of engineering study and mutual understanding and confidence. Those are not mere words; I am sure the members of this association deeply appreciate their significance.

Such a basis has not always been developed. But more and more it is becoming realized that if in any phase of industry opportunism can get by, employer-employee relationship is not such a phase.

Distribution

Having considered briefly the problems of production, we now come to trends in distribution. Through the textile kaleidoscope, we get a glimpse of merchandising policies and methods. And they are truly kaleidoscopic.

Within a very brief span of years, the industry has changed from one which could sell, with very little effort, what it chose to make, and in the quantity it chose to make it, to one which can sell only what the consumer wants—and in the quantity the consumer demands.

Excessive productive capacity, rapid style changes, decentralization of distributive machinery throughout the country and the world, competition from new products for their share of the consumer's dollar—have transformed merchandising from a rather minor function to the most vital single phase of company management.

More important still, they have demanded coordination between production and distribution. There is no room for opportunism here; planning of the most definite type is necessary—and will be still more necessary in the future.

Coordinated Action

If planning were confined within the walls of each individual mill, the result—in an industry composed of thousands of units—would be rather amusing. During the last five years, a new force has entered; the coordinating influence of centralized agencies. I can do little more than suggest that, if you are not familiar with those agencies, you investigate them. I refer to the highly successful activities of The Cotton-Textile Institute; the temporarily unsuccessful plans of the late Wool Institute which is certain to be re-born, even if under another name; the revised activities of established associations in the silk, knitting, finishing, and other divisions of textile manufacture.

Through these agencies, the industry is attempting to balance its production with current demand; to place its cost methods on a uniform and sound basis; to stabilize its employment policies; to develop new outlets for its products and to extend existing outlets; to temper blind and destructive individualism with a sense of unity of purpose, without diminishing the potential return for individual initiative and efficiency.

Conclusion

Summing up, I should like to re-state the major significant trends in the textile industries. These are: Increased flexibility in raw material and machinery; improved application of labor to machine operation, for the benefit of both employers and employees; greater recognition of the importance of the merchandising factor; and the development of cooperative agencies to insure better coordination of all phases.

Fortunately, I was advised that I did not need to attempt to conceal my ignorance of pedagogics in addressing this group of experts; however, I inferred that safety lay in the direction of complete avoidance of any discussion of the relationship between my subject and your profession.

Equally fortunately, I do not believe such discussion is even remotely necessary. The men and women engaged in vocational education whom I have met in textile centers have convinced me—if I really needed convincing—that education today is not the static science it was when I went to school. It seems to be concerning itself with the dynamics of life.

Consequently, to those of you who come into contact with young men and women of our industry, or destined for our industry, I need not point out the opportunity for service which exists in connection with a field where motion is the keynote, as is true in textile manufacture today.

You will realize, I know, that every phase of progress I have itemized is unfinished business. Some of it has just been begun but all of it is potentially vital in shaping the textile future. For the completion of this task of rebuilding an industry, there is needed a personnel possessing the maximum of mental flexibility—and the minimum of mental resistance to new ideas. There exists, at this same time, an opportunity, never before equalled, for the men and women who enter this industry now and in the near future. I cannot promise that that opportunity will immediately reflect itself in commensurate financial return, but I know that this too will follow if the industry pushes ahead the job it has started.

Stabilization Move in Print Cloths

Grows Out of Meeting with Buyers

THOSE who expected the conference between converters and print cloth manufacturers, at Greenville, S. C., Friday of last week, to develop some immediate and miraculous action which would change a demoralized market into a buoyant one, were naturally disappointed. But those who regarded the meeting as an initial step toward improvement, found enough in the specific results accomplished to justify their hopefulness.

Those results included the appointment of a "stabilization committee"; announcement of curtailment plans by several mills; and appearance of better market tone.

James C. Self, president and treasurer of the Greenwood (S. C.) Cotton Mills, was elected chairman of a special committee to develop plans for stabilizing the print cloth market.

The authorized statement made at the conclusion of the meeting by Dr. W. C. Hamrick, of Gaffney, S. C., was brief, and to a large extent non-informative. It is understood, however, that the converters presented their case frankly and forcefully, pointing out that their own welfare was threatened by the serious inventory losses involved in a declining market, and by the instability and uncertainty which have throttled progress. Although buyers, particularly when they assert themselves in this semi-organized manner, can naturally be regarded as holding the "big stick," it is understood that they did not wield it aggressively, but instead confined themselves largely to the logical argument that sellers and buyers were in the same boat, and that a continuation of current market conditions would be financially fatal to both. At any rate, there is no apparent indication of bitterness growing out of the meeting, but rather of a mutual desire to inject stability into the situation.

The most important specific developments subsequent to the meeting were the announcement by several mill executives of intention to curtail. It became known on Wednesday that both James C. Self and Elliott Springs had decided to close their plants for one week at Christmas and for one week per month thereafter. No specific duration was set for this curtailment, the Springs statement merely adding that this would continue "as long as the industry as a whole will give full cooperation to this move."

Since similar announcements were made by Dr. W. C. Hamrick and others, it is the hope of the market that the industry as a whole will follow the lead of these executives and that at least 25% curtailment will be made effective generally.

No matter what may be done, it is pointed out that an immediate though only partial remedy at hand is a Christmas shut-down. Announcements by many mills that they will suspend operations for a week or even more during the holidays are expected to be followed by others to the same effect.

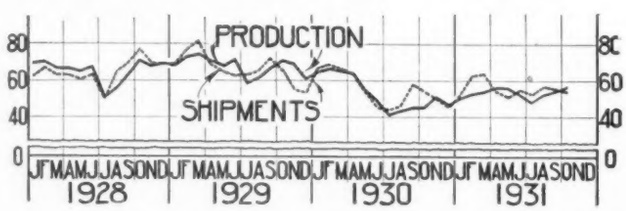
The entrance of the converters into the picture in this way is not entirely new. It represents one more step in their attempt to assert, constructively, their interest in a stable situation. At the meeting of the Textile Converters Association, held Dec. 16, 1930, a resolution was adopted urging "effective proportionate curtailment involving total discontinuance of night work in the mills at present," and expressing the sense of the meeting that the individual converter "encourage by preferential consideration in his commercial dealings, those mills participating in adjustment aims above outlined."

In addition, a series of conferences in 1929 between converters and selling agents lead to the sending of a memorandum to an important meeting of mill men at Greenville emphasizing importance of curtailing production and indicating buyers' desires in this direction.

Although the immediate situation at this time calls for curtailment, and although the market hopes such action will follow last Friday's meeting, it is the opinion of many that a far bigger issue is at stake. Curtailment is, after all, merely a palliative; the real objective is a stable curve of both production and manufacturing margins. There has been effected, during the last year, a far greater degree of stability in mill operations than is generally recognized—as is shown by the accompanying chart. Prices however have weakened steadily, and opportunities for profit have become almost extinct. What is needed primarily is sanity: a determination to keep production in line with demand and, with that as a background, *to sell goods only at prices which represent a fair profit.* In no other way can the interests of seller, buyer and mill worker be protected.

▼

Standard Cotton Cloths—Production and Shipments



Figures are millions of yards per week based on statistics furnished to Ass'n of Cotton Textile Merchants and Cotton-Textile Institute.

That fluctuations in production of standard cotton fabrics have been materially flattened out during the last year and a half is shown by the above chart for 1928, 1929, 1930 and through October, 1931. This chart is reproduced from the fifth annual report of the Cotton-Textile Institute. Even when shipments (represented by dotted line) rose sharply in the fall of 1930 and the winter of 1931, production (represented by solid line) was not increased in proportion.

Price Change Now Would Be Harmful to Rayon

Samuel A. Salvage

Interview by John Black with

Samuel A. Salvage

President, Viscose Co. of America

THE rayon industry approaches 1932 in decidedly better position than it held this time last year. The volume of business during the first eleven months of 1931 has been at least as great as any similar period in the history of the business and while profit margin left much to be desired, the steadily increasing confidence offers promise for the new year. I see no price changes ahead, certainly not downward, and any increase in prices seems remote. I feel that no change of price is desirable at present, and would prefer to see the industry go forward at present levels for most of the coming year. Any change right now would be a harmful thing for the industry, I believe. Indeed, I feel this so strongly that I would oppose such a change by my company, even if our competitors were to initiate one.

Outlook Rests on Production Balance

The outlook is good but it will continue good only if we keep production down to a sales level. We of the Viscose Co. are determined to balance output to orders during 1932 and a general policy of the industry along this line would do much to make for further stability. We expect December to show a falling-off in sales, but that is not serious, considering the excellent showing for the year as a whole. Manufacturers have only minimum stocks of yarn, and we can look confidently to active buying in January, which is likely to continue through the first quarter.

There is a better spirit in the industry as regards production. The trade seems to have learned the lesson of caution in that respect. We have still a long way to go in developing the cooperative spirit, but the present trend in that direction is encouraging. Volume during this year was sufficient not only to consume the heavy carryover but to keep stocks turning steadily. During the second half, we were often operating at close to 100%, and the yarn produced found a quick market. The exceptional demand this year was due largely to the development of new outlets and expansion of existing markets; prices were low, of course, but I do not believe this was a major consideration in making sales. Our present production is about 80% and we will reduce this if any decline in sales warrants such a step.

Balancing of production to sales is a vital need for 1932. However, the theory of 30 days' stock as ideal does not seem to hold any longer; I should say 45 to 60 days' supply on hand is normal. The wider range of deniers and the many types of rayon which laboratory development has given us, necessitate a larger current supply than formerly.

The recent price revision, particularly the elimination of the 150 denier selling at 65c., was a very beneficial thing for the industry and has helped to make manufacturers more confident. The dropping of the price guarantee caused much question as to whether that forecast a price revision; nothing was further from our minds. We merely felt that the need for this emergency step was over and therefore we terminated it. Our company does not need a guarantee, as our customers are convinced that no price change is impending.

Personally, I am strongly opposed to the guarantee in principle, for any except an emergency situation. I can say we will never give a guarantee again, unless a totally unexpected condition arises. Price guarantees are unsound business. No other textile fiber offers one and there is no reason why the rayon industry should. The present gain in stability and confidence makes it needless, and in any event, the price guarantee is an unfair liability on the future for the rayon producer.

Must Push Cooperation

Cooperation among rayon manufacturers will have to be much greater than it is, before we may expect the companies to adopt an open attitude on trade statistics or to get together again in an associational way. The industry's recent experiment in a trade association was unfortunate and I cannot see any early likelihood of a trade association revival in a successful way. When that development comes, it will have to be gradual.

However, the present tendency toward firmer prices and better merchandising is a good sign. I look for very satisfactory business next year.

The margin of profit in 1931 was not big and we cannot expect any great improvement in that regard next year. But I do anticipate an excellent volume at a fair profit.

Value of Textile Research *Stressed at Annual Meeting of A.A.T.C.C.*

P. J. Wood, reelected president, A.A.T.C.C.

AN address by Dr. K. T. Compton, president of Massachusetts Institute of Technology, stressing the need of cooperative research in the textile industry, brought to a climax the eleventh annual meeting of the American Association of Textile Chemists and Colorists at the Hotel Statler, Boston, December 4 and 5. Other features of the meeting included the presentation of technical papers on a wide variety of subjects, discussion of problems encountered in wool dyeing, election of officers, reports of the association's research committee, and the annual banquet. In attendance were over 300 members and visitors engaged in textile processing and allied industries. An invitation to hold the next annual meeting in the South was extended by the Piedmont Section.

P. J. Wood, vice-president and general manager, Oriental Silk Printing Co., Paterson, N. J., was reelected president of the association. Other officers named in the annual election were: W. H. Cady, of the U. S. Finishing Co., Providence, R. I. (reelected), and Alexander Morrison of the American Woolen Co., vice-presidents; Harry R. Davies, Dyestuffs Corp. of America, Boston, treasurer (reelected); and A. Newton Graves, Franklin Process Co., Providence, R. I., secretary. In addition to these officers, who were elected for the usual one-year term, William R. Moorehouse, National Aniline & Chemical Co., and Dr. Walter M. Scott, of the Gustavus J. Esselen organization, Boston, were chosen as councilors for three-year terms.

Technical Session

Dr. Robert E. Rose, of E. I. du Pont de Nemours & Co., Inc., the first speaker at the Saturday morning technical session, took as his subject "The Mechanism of the Dyeing Process." After discussing briefly the various theories of dyeing, Dr. Rose outlined the results of some recent research made by Speakman on wool dyeing, and then described a simple apparatus and procedure for studying the dispersion of dyestuffs in solutions. With the aid of this equipment, which employs a cellophane membrane, a number of interesting facts have been established. The speaker stated that it has been found, for example, that substantive dyestuffs which pass through the membrane of the apparatus give level dyeings on rayon, thus refuting the earlier belief that the degree of dispersion of dyestuffs in solution has no effect on their level-dyeing properties. Again, it has been discovered that dyes of this class which readily go through the membrane are not fast to washing when applied to cotton fabrics. Other experiments indicate that in the dyeing of tin-weighted silk, while there may be some staining of the tin-weighting materials, there is apparently no actual dyeing of them, the silk fibers alone having any real affinity for the dyestuffs. In discussing the constitution of the cotton fiber, Dr. Rose brought out the interesting point that in 1 gram of cotton there is a surface area of approximately 60 sq.yd.

A paper on the "Measurement of Cotton Fiber Quality in Relation to Standardization and Utilization," by Miss Dorothy Nickerson, of the Bureau of Agricultural Economics, U. S. Department of Agriculture, dealt particularly with color variation in raw cotton and its effect on finished goods. Color variations whether due to the variety of cotton or to the locality where grown, are important *per se* and also as an index to other properties of the fiber. Miss Nickerson remarked that the Bureau in developing standards has placed particular emphasis on measuring various properties of cotton. In this connection, the speaker called attention also to a series of spectro-photometric measurements made by Dr. Appel to determine the color of woven cotton fabrics before and after bleaching. Studies thus far completed indicate that cotton which has been classified as grades 1 to 3 give satisfactory results upon bleaching and dyeing; grade 7 after bleaching has a pronounced slaty appearance; and grade 9 is unsatisfactory. The Department of Agriculture is planning to continue these investigations and to make color measurements representative of the 1931 cotton crop. Exhibits of raw cotton, gray goods, and finished fabrics showed the value of these studies.

Hydrogen Ion Concentration

Speaking on the subject "Some General Considerations on the Application of Electrometric Measurements," Dr. W. N. Greer, of Leeds & Northrup Co., mentioned first the two general types of instruments for making these determinations and then spoke of the demand for apparatus which will give rapid and continuous measurements. According to Dr. Greer, various types of equipment are now available which may be employed for determining the full range of hydrogen ion concentration, but precautions are necessary to avoid misapplication of these instruments. Discussion of this

paper brought out a number of textile processes in which accurate pH control is advisable.

Research Activities

At the short business session which followed the presentation of Dr. Greer's paper, reports of the secretary, treasurer, and committee on award of prizes were read; and names of officers who were elected were made public. Dr. Louis Olney, of Lowell Textile Institute, chairman of the research committee, announced that there are now eighteen sub-committees each working on some definite problem confronting the textile chemist and colorist. He then commented on the $5,000 fund allocated to the association this year by the Textile Foundation, Inc., stating that it had made possible the engagement of two additional research associates, and thereby had enabled an extension of the work of the society. Projects now under way include a study of the iso-electric point of wool and its correlation with wool processing on a commercial scale; action of light on pure silk; effect of acids and alkalis on cotton cloth exposed to light; effect of iron, copper, and manganese on cotton exposed to light; and effect of the carbonizing process on wool dyeing. Dr. Olney stated also that it is proposed to classify all of the more important commercial dyestuffs according to the standard fastness tests developed by the association.

A. Newton Graves, elected secretary, A.A.T.C.C.

A test which makes use of the Launderometer for determining the fastness to fulling of dyestuffs on wool was described by Hugh Christison, chairman of the sub-committee on fastness tests for dyed wool; a tentative method for determining the resistance to shrinkage of cotton fabrics was proposed by Howard D. Clayton; and formation of a new sub-committee to formulate standard methods for the analysis of chemicals employed in the textile industry was recommended.

Winners of prizes awarded annually for the most valuable original papers presented at meetings of the Association or published in the proceedings during the preceding twelve months are as follows: Drs. Carl Z. Draves and R. G. Clarkson, first prize, for paper entitled "New Method for the Evaluation of Wetting Agents;" Dr. Walter M. Scott, second prize, for paper on "Some Unusual Reactions of Cellulose;" Noel D. White, third prize, for paper on "Problems in Dyeing Silk Hosiery;" and Foster D. Snell and Cyril S. Kimball, fourth prize, for paper on "The Process of Silk Soaking."

Recent Developments Outlined

Prof. Wilder D. Bancroft, of Cornell University, the first speaker at the Saturday afternoon session, took for his subject "Basic Mordants and Lakes." He stated that recent investigations have proved that if two fibers are dyed with any given dyestuff, the dyeing will be faster to light on the fiber which absorbs the dye more strongly. For example, wool absorbs indigo more strongly than does cotton, and indigo dyeings on wool are, therefore, faster to light than on cotton. The same relation holds true in the case of dyestuffs and mordants, the more strongly a dye is absorbed by a given mordant, the faster to light will be the resultant dyeing. It should be borne in mind, however, that use of colored mordants gives rise to complications of this rule, and that mordants which act as oxidizing catalysts bring still further complications. Professor Bancroft traced briefly the use of mordants and lakes and described the development of an alumina-alizarine-lake which has given good results in the laboratory and may prove advantageous in commercial practice.

A paper on the "Microscope and Fundamental Textile Research," delivered by Prof. E. R. Schwarz, of Massachusetts Institute of Technology, was illustrated with lantern slides showing the most up-to-date microscopic and photomicroscopic equipment employed in textile laboratories. Among the newer types of equipment enumerated by Professor Schwarz as suitable for use in fiber identification and in the determination of fiber, yarn, and fabric characteristics are included special textile microscopes and auxiliary appliances, glass filters of the Wratten type which give the advantages of staining but eliminate its disadvantages, and ultramicropes suitable for textile use. The speaker emphasized the importance of observing textiles by polarized light, stating that this procedure will give information concerning the properties of textiles which cannot be obtained in any other way. He said also that a method is now being developed at Massachusetts Institute of Technology which, by means of motion pictures, will permit the recording of the effect of chemical changes in textiles.

Dr. Milton Harris, research associate of the A.A.T.C.C., outlined recent studies on the "Physical Chemistry of Proteins of Silk and Wool." According to Dr. Harris, physical chemistry gives a superior method of studying the proteins of silk and wool and changes in them. By dissolving these proteins in concentrated solutions of lithium bromide and other salts, diluting to 1 to 5%, and dializing the resultant solution, it has been shown that the iso-electric points of wool and of silk fibroin are in the neighborhood of pH 3.3 and pH 2.2, respectively. Practical applications of the knowledge gained in these studies are expected in wool scouring and dyeing and in the degumming of silk.

In a paper on the subject, "A Study of Stress-Strain Curve of Rayon," Dr. Henry Green of Tubize Chatillon Corp., described a simple procedure which enables the accurate measurement of the true elastic limit and other properties of rayon and their comparison with similar properties in other fibers. By following this procedure, it has been discovered that rayon shows less than 1% of elongation before plastic flow begins. In making these measurements it was found that tension must be applied for a period of approximately two weeks before a state of equilibrium is reached.

Speaking on the subject "Suggestions for Standardizing Sulphonated Oil Analysis," Prof. A. H. Grimshaw,

Harry R. Davies, reelected treasurer A.A.T.C.C.

of North Carolina State College, reviewed the need for an accurate method for analyzing sulfonated oils, decried the wide divergence of methods now in use, and recommended that a standard method be developed and adopted by the A.A.T.C.C. Professor Grimshaw suggested that the methods outlined in the March 14, 1931 issue of TEXTILE WORLD be studied as a possible basis for the standard method.

The final paper presented at the afternoon session was by Dr. H. Meyer, of General Dyestuffs Corp., on the subject "Two New Scouring Agents." The materials described by Dr. Meyer, Igepon A and Igepon T, are sulfonated compounds soluble in water, and said to have marked scouring properties. According to the speaker, a property of these products which make them of particular advantage in wool scouring and other processes is that calcium and magnesium soaps formed with the Igepons are also soluble, and that the new agents may, therefore, be used with hard water. Other properties cited were ease of solution and ready rinsability. Igepon T, which is not yet available commercially, is said also to be staple, even at boiling temperatures, to both alkalis and acids. In addition to their use in wool scouring, the new agents are recommended by Dr. Meyer as additions to the silk degumming bath, for soaping dyed and printed fabrics, and in making naphthol prepares.

Wool-Dyeing Problems

At an informal technical session held Friday evening, Dr. E. M. Smith of Arlington Mills spoke briefly on "Tests for Color Blindness." Dr. Smith illustrated with lantern slides the Ishihari test, which provides a simple and accurate method of detecting color blindness, and which has revealed that in this country one man in every twelve is color blind. The next feature of the open forum was "A Questionnaire on Some Practical Problems of Wool Dyeing," the questions being prepared by John G. Masson, of the Rosemont Mill and answered by Dr. E. W. Pierce, of the Ciba Co, Inc. After stating that with few exceptions in the case of light shades, it is the practice when employing acid-chrome dyes to dye wool at or near the boil, Mr. Masson asserted that this temperature seriously reduces the tensile strength of the wool and asked if any research had been conducted in dyeing at lower temperatures. In reply Dr. Pierce said that it was the general opinion that presence of free chromic acid in the dyebath rather than high temperature was the cause of lessened tensile strength, and that new dyestuffs in which the chrome is combined as chromite are being developed to overcome this objection. Further discussion of this question tended to show that treatment of wool at high temperatures, even with water alone, may cause a loss in tensile strength. It was brought out that since the iso-electric point of wool is at approximately pH 3.3, water is alkaline as compared to the wool; and therefore may cause chemical damage and consequent loss in strength. Mr. Masson next inquired as to what progress is being made to enable the coloring of wool in bright shades which are fast both to light and fulling. In his answer, Dr. Pierce called attention to the aftertreatment of dyeings with direct colors to increase their fastness to washing and predicted that the day is not far distant when acid dyes will be available which will yield shades suscepible to aftertreatment to render them fast to fulling.

The final question propounded by Mr. Masson related to the progress being made in the application of anthraquinone vat dyes to wool. Dr. Pierce answered that vat dyeing of wool is in its infancy, and that considerable work is being done to facilitate the application of the vat colors. This research indicates that lessening of the amount of caustic in the dyebath and addition of protective colloids and glucose or a similar reducing agent is an approach to the problem. He pointed out also that some of the indigoid vat colors are superior in their fastness properties to some of the anthraquinones, and that care in the selection of dyestuffs is also essential.

Following this discussion Carlton S. Francis, Jr. of the Celanese Corp. of America, showed moving pictures of his recent expedition to Venezuela where he and his party explored the Oronoco River.

Urges Cooperative Research

H. D. Grimes, chairman, Northern New England Section, presided at the annual banquet which was held Saturday evening in the ball room of the Hotel Statler.

Dr. K. T. Compton, President of Massachusetts Institute of Technology, outlined briefly the requirements involved in an adequate program of fundamental research and emphasized that if worth-while results are to be obtained, large expenditures of time, effort and money are required. He pointed out further that in England over $200,000 annually is being spent for textile research at Shirley Institute where 70 university trained men are retained. As industries not research minded are impatient for quick results, and as individual organizatons in the industry are not willing or able to support an adequate research program, the best chance of furthering fundamental research in the textile industry is apparently through cooperative efforts. P. J. Wood, President of the association, paid tribute to the other officers and members of the society who are cooperating in furthering the aims of the organization. The two past presidents, Dr. Louis Olney and Dr. Elvin H. Killheffer spoke briefly—Dr. Olney tracing the growth of the association and Dr. Killheffer decrying the debasement of textiles as exemplified by the substitution of lower priced colors for fast dyes in printed fabrics, and urging that textile manufacturers and finishers get in closer contact with the ultimate consumer. Other speakers at the banquet included the Hon. James M. Curley, Mayor of Boston, and Bill Cunningham, sports editor, of the Boston *Post*. H. R. Davies was chairman of the general committee which arranged the program for the annual meeting.

Cooperative Effort to Better Conditions

Praised by Dr. Graham Before N. C. Assn.

THE more intelligent and progressive leaders of the textile industry, who have cooperated with the Cotton-Textile Institute, deserve the support of a strong public opinion in their economically sound and wisely humane efforts to abolish night employment for women and children in the mills and to limit the work-week to not more than 55 hours by day and 50 hours by night, according to Dr. Frank Porter Graham, president of the University of North Carolina, in the principal address delivered at the winter meeting of the Cotton Manufacturers Association of North Carolina, which was held Dec. 4 to 5. More than 225 members and their guests registered at The Carolina Hotel, Pinehurst, N. C., for the two-day session.

Cotton manufacturers of the State were urged to lend their fullest possible support to the Cotton-Textile Institute in the movement to balance production in line with demand. This was embodied in a resolution passed in the regular executive business session held Saturday morning, in which it was recognized that if existing deplorable conditions in the cloth and yarn markets continue, it will only be a question of time when the financial structure of the entire industry will be threatened with destruction.

Important business transacted in the Saturday morning session included a completion of the incorporation of the association, adoption of the certification of incorporation, and the ratification of the set of by-laws.

Following these items of business, officers of the association were re-elected, as follows: K. P. Lewis, Durham, N. C., president; Charles A. Cannon, Kannapolis, N. C., first vice-president; A. M. Fairley, Laurinburg, N. C., second vice-president; L. W. Clark, Spray, N. C., third vice-president; and Hunter Marshall, Jr., Charlotte, N. C., secretary and treasurer.

A new board of directors was elected, as follows: To serve for one year—C. E. Hutchinson, Mount Holly, N. C.; E. C. Dwelle, of Charlotte; S. P. Cooper, Henderson, N. C.; J. H. Rutledge, China Grove, N. C.; J. Harvey White, Graham, N. C.; A. H. Carr, Durham, N. C. To serve for two years—R. R. Ray, McAdenville, N. C.; Harvey W. Moore, Concord, N. C.; C. D. Welch, Cramerton, N. C.; Herman Cone, Greensboro, N. C.; B. B. Gossett, of Charlotte; R. Grady Rankin, Gastonia, N. C. To serve for three years—Arthur M. Dixon, of Gastonia; F. J. Haywood, of Concord; J. A. Long, Roxboro, N. C.; Huber Hanes, Winston-Salem, N. C.; W. B. Cole, Rockingham, N. C., and W. E. Holt, Lexington, N. C. The new by-laws, it was explained, provide for a rotation of directors, one-third each year.

Unanimously adopted also was a resolution protesting against a measure proposed by the New York Cotton Exchange which would allow full premiums on $\frac{15}{16}$ and 1 in. staple delivered on contract. It was claimed that the proposed measure would work an unjustifiable hardship on cotton mills as it would lower the value of the present contract and raise the basis on $\frac{15}{16}$ in., 1 in., and better cotton.

President K. P. Lewis acted as toastmaster at the banquet Friday evening and introduced the principal speaker. Honor guests recognized at the banquet were W. S. Nicholson, Union, S. C., president of the Cotton Manufacturers Association of South Carolina; W. M. McLaurine, of Charlotte, secretary of the American Cotton Manufacturers Association; and Walter C. Taylor, secretary of the Southern Textile Association.

In his opening remarks, Dr. Frank Graham declared that he had come before the association to make no retreat, nor to make any corrections of misrepresentations concerning his views on economic and social problems confronting North Carolina.

"Mis-statements have a way of correcting themselves in God's good time," he asserted. "We must have a deeper spiritual faith than those who would unwisely have us try to strike down freedom of speech and publication because these democratic principles have been abused. Freedom of speech and publication, with all their attendant abuses and excrescences, are the constant and fresh resources of a free State and a free religion."

He emphasized the point that workers in Southern industries were a basic part of our economic productive power and our social well-being. He declared that efforts to set groups in opposition to each other should be regarded as a violation of those principles for which North Carolina stands. Four broad points which he insisted were based on sound economics and "simply the essence of religion and democracy, fair play and the equal chance," were enumerated, as follows:

1. Reduction of the hours of labor from the legal 60-hour week to the maximum limits set forth in the Cotton-Textile Institute's 55-50 program;

2. The modification or elimination of the fourth-grade clause in the child labor law;

3. Abolition of night employment in the mills for women and minors under 18 years of age; and

4. Recognition of the right of individual capitalists and individual laborers to organize, or not to organize, as guaranteed under the American principle of equal rights; and faith in the constitutional freedom of speech and assembly.

"Those who considered such public stands and beliefs as attacking the textile industry or as undermining our Americanism," Dr. Graham declared, "were simply misrepresenting both a great industry and fundamental American ideals."

A. G. Myers, of Gastonia, and J. Spencer Love, of Burlington, were awarded golf prizes by W. H. Willard, chairman of the tournament committee.

Standard Definitions

Proposed for Silk and Rayon Terms

*By W. M. Kuhn**

EVERY day new words are being born. The coining of scientific, legal, or technical terms presents most always a consideration of vexed elements and questions. Usually a new word will at first have but one association; but after it has been in use for a time, it may become a keyword to many associations and it will therefore be infinitely more difficult a task to work out an adequate definition for it because of its possible expressed or implied meanings, distinctions, and relationships.

It is not uncommon to hear from the people engaged in a selling department a complaint to the effect that the people running the mill do not know what they are talking about—and vice versa—because they do not speak the same language on the very same problems. Their respective conceptions run in opposite directions. Internal friction within a company can be compared only to a cancer—it must be nipped early or it will devastate and destroy. A uniform language within our industry will prove a very effective starting point to get the warring, let-George-do-it, and it-cannot-be-done factions in line.

Trade terms and their definitions must not be mere words, for they may at some future time be referred to and become the very basis for decisions in important court litigation or arbitration proceedings. Haphazard and ambiguous words and terms in contracts lead invariably to confusion; and the usual outgrowth of confusion is litigation, injunctions, etc. No trade standards will be possible or assured of cheerful, industry-wide acceptance or faithful application so long as the many branches of the silk industry cannot understand one another's problems in unambiguous and precise language.

I take great pleasure in submitting the accompanying set of silk and rayon terms and definitions that are under study by Committee D-13 of the American Society for Testing Materials. The United States Bureau of Standards is equally concerned with the study of these terms, and so are a number of other engineering societies.

The opinion of every reader or friend of this publication is invited and sincerely welcome, no matter to how limited an extent it may be expressed. Foremen's clubs, workers' forums, and trade-association groups are especially invited to communicate their expressions on the subject matters enumerated by referring to the respective index numbers which are set opposite the terms. Please address your comment to the technical editor of this publication.

We shall at an early time arrange for a tabulation of the replies received and publish promptly the result of expressions on this set of terms and definitions. From time to time in the future, we shall publish a new set for comment through this publication. Thus we hope that the largest possible number of people in the silk and rayon industry may participate in the building of an ever up-to-date trade vocabulary of which the value will accrue to all in the reduction of an enormous amount of blame upon blameless individual workers or branches of the industry, and of unjust claims, tedious and costly litigations, and loss of business.

1. *Bad Cast* (raw silk): Classified as a "major" defect by the Silk Association of America. Casts are the beginning of new cocoon filaments. *Appearance:* Abruptly increased diameter in a raw-silk thread. This defect may vary in length from a fraction of an inch to many times that length. *Causes:* A single cocoon filament may not have been properly "cast" onto the raw-silk thread in the reeling operation; or a "layer" of filaments may have loosened itself from the cocoon and have come off the cocoon simultaneously by passing through the reelers porcelain gage-eyelets in a bulk, which either suddenly or gradually decreases to the required number of single cocoon filaments—that is, to the normal size of the raw-silk thread.

2. *Boiled-Off Silk:* The product of the boiling-off, also called degumming, process in which raw silk, thrown silk, or fabricated silk is subjected to a treatment in hot water, soap, and other solutions to dissolve and remove the gum or sericin, which is the coat protecting the clean fiber filaments of a thread from becoming separated, and to remove tints, dirt, and other foreign substances which are not inherent in the nature of the silk.

3. *Book-Fold:* A form and a method of putting up and packing in convenient form, used for the shipping and storing of fabrics of a wide width. This is in contrast to the form and method of rolling fabrics of broad width either onto paper tubes or onto heavy cardboards like a bolt. The goods may or may not be doubled in the center to one-half their width, and are thus folded in successive layers of an equal length, usually of 1¼ yd. to each layer, until the entire piece is "done (put) up" in folds with the respective mill-ends being lapped inside the first or last fold. Hence the piece is placed onto a white tissue paper which is wider in width than the width of the folds. The tissue is in turn protected by a medium stiff "buff and white" wrapper that tallies in width with the width of the folds. The piece is next put (packed) into book-fold by tucking both ends of the folds in with the respective tissue paper and the buff and white wrapper, while in the width overlapping stubs of tissue paper are tucked under the buff and white wrapper, thus

*Textile research and management engineer, New York. Originator and author of "Certified Silk Service Standard Inspection," of "Classification and Grading Code for Grege Broad Silks and Rayons," and of "Standard Inspection, Classification and Grading Code for Dyed and Finished Broad Silks and Rayons." This article copyrighted by Miss Kuhn, 1931.

affording full protection to the goods. This packing process is similar to the act of closing an open book and putting it into its jacket.

4. *Cockled or Cockling:* Defective appearance of texture —contrasting with the smooth, even, or perfect face of texture. Cockling may be due to a number of causes—varying kinds and sizes of materials; uneven, inadequate, or too high a twist; irregular tension; unbalanced construction; and unsatisfactory ingredients, application of chemicals, or methods of processing.

5. *Corkscrews* (raw silk): Classified as a "major" defect by the Silk Association of America. *Appearance:* Spiral-like raw-silk thread, instead of smooth and cylindrical. May seem thinner or coarser in size. (This may prove to be only an illusion.) Runs at varying lengths. *Causes:* Caused in the reeling operations by some cocoon filaments having become unevenly tensioned, or a cocoon filament may have broken and been tied or pieced with the tails not cut so that the tails may have attached to the thread in the reeling in spiral-like fashion onto the raw-silk thread; thus this defective portion of the thread is called "corkscrew."

6. *Corkscrew Twist:* Defective appearance in a twisted silk-thread or thrown rayon yarn. *Causes:* May be caused by uneven twist or uneven tension of individual plies. It may also happen in a certain spinning operation when one of several plies to be thrown together into one thread attaches itself to another thread and in this amalgamation twists itself loosely around this thread. Also, sometimes when a thread breaks and is pieced together, the tail-ends may be left to wind themselves loosely around the thread in the spinning, giving a spiral-like effect in such portions.

7. *Crepe Yarn:* Silk, rayon, cotton, or wool threads may be given a twist of a specific number of turns per inch or centimeter. The thread contracts in the twisting; and the evenness of the twist, the type of twist, and the number of turns determines to a definite degree the character of the face of the texture for which the twisted yarn is used. The twist in the yarn is *set* by a process of steaming. The twist co-incidently increases the strength of a thread to a limited extent. The twist may have a bearing upon the luster of woven or knitted fabrics and upon the capacity of dye penetration and absorption. A crepe yarn may consist of a single thread, twisted one way, or of several threads joined by throwing into one thread by a combination of twists.

10. *Crimp:* A term synonymous with the French word "crepon." "A good crimp" means also a "good pebble" in finished crepe-de-chines. The word "crimp" is sometimes used mistakenly instead of "take-up."

11. *Denier:* A unit of weight and length used to express the size of silk and rayon threads. "The Dictionary of Silk Terms," published in 1915 by the *American Silk Journal*, page 31, reads: "A small silver French coin, value one-twelfth of a sou and weighing 24 Paris grains, used as the standard weight of silks." According to the United States Testing Co., a denier is given as a skein of silk 450 meters long, weighed by a unit of 0.05 gram, (called denier); 13 to 15 is written 13/15, etc. The standard of denier varies considerably in different parts of Europe, the following being some of the values in use:

	Weight, Grains	Length, Meters
Denier (Legale)	0.05	450
Denier (International)	0.05	500
Denier (Turin)	0.0534	476
Denier (Milan)	0.051	476
Denier (New Lyonese)	0.0531	500

[A unit of weight equivalent to .05 gram, by which the size of a silk or rayon yarn is measured, a standard length of 450 meters being weighed in the sizing test.—Definition proposed by editor.]

12. *Fiber* (general textile): Usually understood to be the individual constituents or filaments, hollow or solid and cylindrical in structure, of threads of a vegetable, animal, or chemical corporeity.

13. *Fiber* (silk): The fiber (filaments) produced by the silk worm in the form of cocoons; also the thread produced by reeling and coagulating a specific number of cocoon filaments together by reeling into one thread, each raw-silk thread being composed of a number of filaments.—From "Dictionary of Silk Terms," 1915, *American Silk Journal.*

14. *Fibers, Artificial: Cellulose-Acetate Rayon:* Filaments composed of an acetic ester of cellulose coagulated or solidified from its solution.

Cupramonium Rayon: Filaments composed of a regenerated cellulose which has been coagulated or solidified from a solution of cellulose in ammonical copper oxide.

Nitro-Cellulose Rayon (Chardonnet): Filaments composed of a regenerated or denitrated cellulose which has been coagulated or solidified from a solution of nitrated cellulose.

Viscose Rayon: Filaments composed of a regenerated cellulose which has been coagulated or solidified from a solution of cellulose xanthate.

The preceding four definitions are proposed by the American Society for Testing Materials, Com. D-13.

18. *Filament: Vide* Fiber (general textiles).

19. *Float:* A defect in the texture of a woven fabric caused by one or more consecutive warp threads being passed over or under by the shuttle. Thus, the warp threads are not interlaced with the filling and therefore "float" upon the face of the texture. Faulty tension of warp threads from piecing bobbins, broken warp ends, etc., often causes a "condition"—that is, many floats in one piece of goods. Satins show the float defects most pronouncedly.

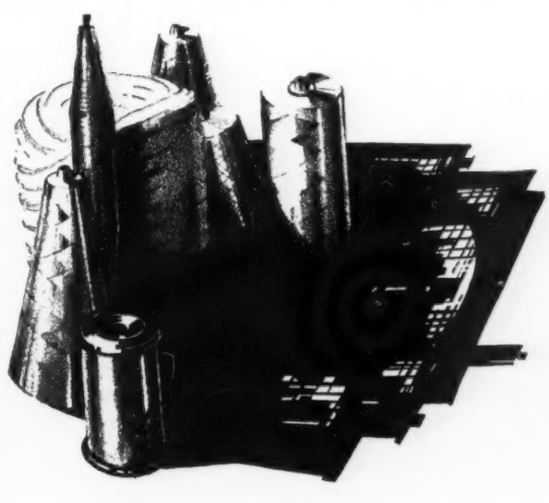
20. *Grenadine Yarn* (thrown silk): Definition by the Silk Association of America, *Silk Digest Weekly*, Sept. 20, 1930: Grenadine yarn is a yarn composed of more than one thread of which each individual thread has been twisted in the same direction, then doubled with a reverse twist, each twist having a minimum of approximately the following number of turns per inch, depending on the number of threads used: two threads, 13/15 denier or equivalent, 32 turns per inch minimum; three threads, same denier, 30 turns minimum; four threads, same denier, 28 turns minimum. When more than four threads are used, the number of turns will decrease in accordance with the above proportion.

21. *Hardtwist:* A yarn consisting of one or more raw-silk threads, having been thrown in the un-degummed state and twisted one way in the single ply; or several threads joined together by a twist of more than 30 turns per inch. Hardtwists are used for the production of chiffons, georgettes, radiums, grenadines, crepe-de-chines, crepe satins, etc.

22. *Hairiness* (raw silk): A condition of silk threads due to countless fibers of fragmentary size having been broken off the individual cocoon filaments. This condition is also known as lousiness of fuzziness.

23. *Kink:* [A distinct deflection of a portion of the length of a yarn from the general direction assumed by the remainder.—Definition proposed by editor.] In twisted warp or filling yarn. May be woven into the fabric. Caused by insufficient setting (steaming) of the twist or too high a twist. In either case the yarn snarls and has a tendency to loop. May also be caused by tension difficulties.

24. *Knots* (raw silk): Classified as major defect by the



Silk Association of America. *Cause:* Tail-ends unclipped from piecing cocoon filaments or raw-silk threads together in the reeling. Knots of less than one-inch length are termed "long knots," and those more than one inch in length are termed "very long knots."

28. *Loops* (raw silk): [A ring-like formation of a filament or filaments protruding from the body of a thread or yarn.—Definition proposed by editor.] Classified as a "minor defect" by the Silk Association of America. *Cause:* May be caused by irregular size of individual cocoon filaments, or irregular tension given individual cocoon filaments in the reeling operations. Many loops can hardly be discerned in the raw. In the reeling it is very difficult to control the formation of these tiny loops. They do show up grayish after dyeing and finishing, because they do not absorb the dyestuff so thoroughly as the threads that are intact—that is, having no loops.

29. *Mispick:* A defect in woven texture caused by a pick of filling failing to bind or interlace in the desired sequence. Due to faulty mechanical control in weaving.

30. *Missing Pick:* A defect in woven texture. One filling thread from selvage to selvage is missing. *Cause:* Pick is taken out.

31. *Broken Pick:* A fabric defect in woven texture consisting of one filling thread broken between the two selvages.

32. *Moisture Content, Moisture-Free Weight, Moisture Regain:* Present in textile materials. Ascertained by conditioning. [Ascertained by comparing weight of sample as is and after being dried.—Editor.] To determine or to fix the true or dry-fiber weight of a lot of textile materials, take from that lot for a test a representative quantity of material and dry it absolutely to a *constant* weight, now called dry (moisture-free) weight. This is taken by a sensitive scale which is installed within the conditioning (drying) oven. As soon as this test lot of material is taken out of the oven and is exposed to the atmosphere, the material will absorb moisture. The amount absorbed is now called "regain." By researches, the degree of heat to be maintained in the drying oven and the atmospheric conditions of temperature and relative humidity to be controlled outside the oven have been established respectively for silk, wool, cotton, and some rayons. To dry silk to constant weight, a heat at 130 to 140° C. (266° to 284° F.) is maintained in the conditioning oven. *Regain* in moisture in silk is 11% when taken out and kept in a room of which the atmospheric condition is controlled at 70° F. and a relative humidity of 65%. [The percentage of moisture content is based upon the weight of fiber plus moisture as 100%. The percentage of regain is based upon bone-dry weight as 100%.—Editor]

33. *Neatness* (raw silk): Visible quality-characteristics in the raw-silk threads, such as small loops, hairiness, nibs and other imperfections which are of very small size. [Quality characteristic involving such visible defects as small loops, hairiness, nibs, and other imperfections of very small size.—Editor.]

34. *Nibs* (raw silk): Tiny defects in the raw-silk thread caused mostly in the reeling operations by inexact casts. Appearance is like pin heads or tail-ends of minute dimensions.

35. *Organzine Yarn:* Two or more raw-silk threads (plies) twisted individually one way 16/18 turns per inch, then joined together by throwing (doubling or plying) into one thread by reverse twisting 14/16 turns per inch. This yarn is used mostly for hosiery and for warp stocks.

36. *Pick:* A strand of filling (or weft) material laid across by the shuttle through the open loom shed, full width of the warp, from selvage to selvage. As the loom shed closes, the pick is beaten in; and thus the filling material binds and interlaces with the warp.

37. *Plain Weave:* Usually a fabric requiring as few shafts as possible in weaving, like chiffons, georgettes, crepe-de-chines, tafettas, etc. [For textiles other than silk and rayon, simplest interlacing of warp and filling threads, in which one pick passes over one warp end and under the next while the adjacent pick passes under the first warp end and over the second, the design repeating on every two ends and picks.—Editor.]

38. *Raw Silk:* A term applied to the fiber produced by the silkworm in the form of cocoons. The term also applies to the thread produced by reeling a given number of cocoons together; thus each thread is composed of a number of filaments. "Dictionary of Silk," 1915, *American Silk Journal.*

39. *Rayon* (artificial silk): A generic term for yarns made of filaments from various solutions of modified cellulose by pressing or drawing the cellulose solution through an orifice and solidifying it in the form of a filament or filaments (solid or hollow) by means of some precipitating medium.—Proposed by American Society for Testing Materials, Committee D-13.

40. *Reed Mark:* Marks, tracks, or streaks running the warp way of the cloth, usually due to insufficient or too many warp threads being arranged in one dent; also due to an injury to the reed or to faulty setting of the reed.—"Dictionary of Silk Terms," 1915, *American Silk Journal.*

41. *Slug* (raw silk): Classified as "major defect" by the Silk Association of America. *Appearance:* Abruptly increased and abruptly decreased diameter in raw-silk thread. This defect is short in length, from $\frac{1}{8}$ to about 1 in. *Causes:* Same as explained in defining causes of bad casts.

42. *Smash:* A fabric defect where the texture has been ruptured by the breaking of a number of threads, the causes of which lie immediately in the faulty mechanical performance of the loom, but which will in turn be traced to any or all of the following causes: Poor quality of material; faulty processing; poor workmanship in warping, entering, or twisting; defective shuttle; improper setting of reed; or improper timing of shed, pick, or harness motion, etc.

43. *Spun Silk* (French schappe): Yarn spun from silk waste which has not been fully degummed.—"Dictionary of Silk Terms," 1915, *American Silk Journal.* [Yarn spun from short silk fiber by methods used in the cotton and wool branches of the textile industry.—Editor.]

44. *Standard Atmosphere, Standard Moisture Regain, Standard Weight: Vide* Moisture Content, Moisture-Free Weight, Moisture Regain.

45. *Take-Up* (weaving): A term denoting the take-up of length of a thread in the weaving; that is, a curve or crimp-length that is taken up at each binding point where the filling thread interlaces with the warp thread. When such a crimped thread is taken off the fabric, and it is straightened out without tension, its length naturally exceeds that of its respective apparent length when it is measured in the fabric. The difference between the two lengths is the take-up, and it is expressed in relative percentage. Take-up is related to shrinkage (contraction) of goods in dyeing and finishing. [Reduction in straight-line length of thread in weaving, due to deflection of thread caused by interlacing.—Editor.]

46. *Tram:* A silk yarn consisting of two or more threads of raw silk joined (thrown) together by a very low twist. Tram yarn is used chiefly for filling and for hosiery.

47. *Thread of Silk: Vide* Raw Silk. Often called grege thread.

48. *Thrown Silk, Thrown Yarn:* A single thread of silk (or dyed grege) that has been given a twist of a specific number of turns per inch. If two threads are twisted together into a one-thread yarn, the result is called two-thread organzine, two-thread tram, two-thread crepe, etc. If three threads are twisted into a one-thread yarn, the result is called three-thread tram, three-thread crepe, etc.

49. *Wrong Draw:* Fabric defect caused when one or more warp threads have been drawn through the wrong harness, producing a defect due to the warp and filling not interlacing in accordance with the prescribed weave or design.—Proposed by American Society for Testing Materials, Com. D-13.

[In the wool and cotton branches of the industry one frame of heddles is called a harness; in the silk branch one frame is generally called a shaft and the group of shafts on the loom is called a harness.—Editor.]

50. *Yarn:* An assemblage of fibers or filaments of animal, mineral, or vegetable origin, either natural or manufactured, twisted or laid together to form a strand or group of strands for use in weaving, knitting, or forming in any manner into textile materials.—Proposed by American Society for Testing Materials, Com. D-13.

Year's Technical Progress *as Seen by Engineers*

◆ *A review of the year's technical improvements in the cotton, wool, silk, and rayon branches of the textile industry is contained in the Progress Report issued by the Textile Division of the American Society of Mechanical Engineers last week. W. L. Conrad, consulting engineer, New York, is the author of the report. An abstract follows.*

NOTWITHSTANDING the existing depression and the fact that industry as a whole has been materially retarded, both as to production and development of new ideas, the textile industry has apparently made very considerable progress in the solution of industrial problems and in the development of machinery.

Cotton and Wool

High-speed looms for the manufacturing of both cotton and worsted fabrics have added much to the already well-developed loom industry. These new looms contain many novel mechanical refinements, and their operation apparently is smoother and more uniform than that of the older type.

A new cotton automatic loom incorporating a number of important improvements has been announced; among the advantages claimed for this loom is the ability to weave full 41-in. goods on a 40-in. loom. It is possible also to use larger rolls of cloth, a larger yarn beam, and larger shuttles than could be employed with previous models. The new loom has been designed to run at a high speed, and it is stated that two mill installations for tests are running successfully at 190 to 200 picks.

A high-speed rotary-traverse winder adapted for winding either cones or tubes, and particularly distinguished by the fact that it has no reciprocating parts for traversing the yarn lengthwise of the package, was announced early this year. It is stated that as a result of this arrangement there is no perceptible friction or strain imposed on the yarn by the traversing means.

An air-circulating system maintains a constant relative humidity in the opener and picker rooms and controls the regain of the stock.

In England an important development is the inclined mule-spindle ring frame. It is stated that this equipment eliminates the drag during winding which limits the fineness and softness of yarn spun on the usual ring frame. Another development, of German origin, is a compound-drafting spinning frame. Its outstanding feature is that there are two sets of drafting rollers. The second is designed as a long-drafting unit. It is stated that drafts of from 40 to 400 may be used.

A combination warping and gassing equipment for handling either balled or beamed warps has been brought out during the year. The burner action is automatically controlled through the starting lever of the machine. Another yarn-gassing machine, of French origin, is distinguished by the use of specially insulated burners to prevent loss of heat by radiation and conductivity.

A yardage-measuring stop motion for cotton roving frames has been brought out. This device permits stopping of the roving frames at any predetermined number of yards on the finished bobbin. A slasher press roll is being introduced which can be raised or lowered so that it may be brought in line with the barrel of the beam when friction is applied. An automatic-take-up screw joint has been applied to steel spinning rolls. With it, buckling or distortion of the roll is impossible, since all thrust and torque are taken by the substantial thrust collar which is an integral part of the roll.

A new invention for the wool industry has made its appearance in the form of a machine to unravel woolen rags at a high rate of speed. Early this year a high-speed automatic worsted loom, having a practical speed range of 130 to 160 picks per minute, was announced. This loom was originally designed for the manufacture of tropical worsted in the 8- to 10-oz. class, but has been found to be capable of handling some classes of work ranging from 4 oz. to 20 oz. Test indicates that at least six looms can be run to a weaver, and 24 to 32 to a fixer's section. It is a 4x1 box loom.

A number of improvements have been made in a woolen card which was first brought out somewhat over a year ago. The most interesting feature of this card is the use of small-diameter cylinders. The small cylinder affords evenness of web, yet gives the same amount of carding as usual. A new type of card clothing designed to prevent the formation of card strips has been developed this year in Czechoslovakia. The main cylinder, doffer and rollers are first clothed and the clothing then metallized by means of a foil of special alloy, which is passed through the staples. Several unique features are embodied in new tape condensers introduced this year.

Dyeing and Finishing

Notwithstanding the existing depression, considerable progress has been made during the present year in improving conditions and processes in the cotton-finishing industry. Perhaps the most important and far reaching of these improvements has been the development of the Sanforizing machines and methods widely discussed during the past year. The latest developments in these machines permit control of the shrinkage of both the warp and filling of the fabric, which is considered to be a very important forward step.

Another outstanding development is a new flame compression singer which was brought out this year. These burners trap the flame between the burner casting and the cloth, and as the result of the air having been previously mixed with the gas, complete combustion is secured without the addition of secondary air. Two such burners will do the work of five copper plates.

The machine is much simpler and easier to maintain, and the fuel consumption is decidedly less.

Another development of signal importance has been a jig which has been devised for use in the finishing industry and which apparently is most successful in eliminating many of the difficulties so common in the older type of jigs; the bars are adjustable and reversible, and the driving mechanism is of a decidedly novel nature.

An improved method for treating fabrics composed wholly or in part of rayon or other synthetic fibers was announced this spring. The process is said to eliminate the harsh feel, high luster, and speckled-face characteristic of many fabrics of this type, and to impart a soft, mellow handle which more nearly resembles that of real silk. The method for producing this improved appearance and handle consists in permeating the fabric with steam at a suitable pressure and temperature, and thereafter cooling the fabric and withdrawing the steam by forcing air through the goods.

A new type of finishing machine for tubular knit fabrics has been devised which subjects the fabric to a sponging, shrinks it, puts on the finish by pressing the goods under hot paper, and delivers a finished package. In finishing tubular fabrics with this machine, the goods are passed over a superheated steaming cylinder of large diameter, are picked up and conveyed through a smoothing operation by means of a sheet of thin glazed paper, which acts as an apron, and are then rolled automatically in the paper. Another finishing machine for tubular knit fabrics which has been brought out insures accurate control of both the width and length of the fabric during its progress through the machine.

Application of the counterflow principle to bleachhouse or print-works washers is a development which is said to enable a water saving of 50 to 75% and at the same time permit more thorough washing and cleansing than is obtained with ordinary types of equipment. This method is now available on both the slack- and tight-strand types of machine.

Another cloth washer, designed primarily for use in woolen and worsted mills, although only 2 ft. longer than the older models, is said to have nearly twice the capacity of the old machine. In this equipment the shape of the tub has been changed to allow the cloth to open and remain in looser folds. Other improvements embodied are a level-control drain, a non-leaking suds box with two-way valves, a sheet-spray manifold, unloading roll, and improved pressure device with nip-opener.

A new type of extractor for tubular knit goods was announced early this year. This machine is equipped with a so-called "propeller spreader," which is made with up to twelve driven rolls which propel the cloth through the machine. This device permits the fabric to be spread evenly to any desired width. Goods extracted on this machine pass over the spreader and through a pair of squeeze rolls, which force the excess water out of the fabric, and finally to the dryer.

An improved vacuum extractor, originally designed for extracting velvet and corduroys, has been adapted for the removal of moisture from sheer fabrics of silk, rayon, and cotton. This equipment has a slot-closing device which adapts the machine for the reception of cloth in varying widths. It is also equipped with a variable-speed conveyor drive in order to permit synchronism with other machines operating in range.

A finishing machine for axminsters consists of a friction let-off back-sizing unit, which sizes the carpet in the usual manner, a steam box which steams the back of the carpet under pressure, and a large copper cylinder which not only dries the carpet but stretches and irons it.

A development in textile-printing machines is a new gear system designed to eliminate the handling of star gears, which have to be changed to suit the various sizes of printing rollers. The system consists of a series of small intermediate gears of laminated construction to minimize noise, all mounted on a segment framework which can be swiveled about the center of the star gear. As the print rollers are changed in size, these intermediate gears can be brought into mesh with the fitting gears on the mandrels simply by rotating the gear frame.

A full-width print washer and dryer embodying a number of improvements was brought out this spring. While the machine was designed primarily for light printed silks, it is said to handle rayon equally well.

A portable instrument for determining the air permeability of fabrics has been developed, and tests have been made on garments for under- and outerwear and on parachute cloth.

Waste-heat reclaimers operating on a new method are now available for recovering the heat lost from dry-can vapor and from ager exhaust.

A new skein-dyeing machine which is recommended particularly for the application of vat colors to silk, cotton, and rayon was shown at one of the recent textile-machinery shows. It operates on the principle of the movement of both yarn and liquor. The movement of the yarn, however, is very slight, being only enough to shift the position occasionally to insure uniform action. On the other hand, the movement of the liquor is very great, the entire bath passing through the yarn under low pressure once each minute.

Silk, Rayon, and Knitting

Two new looms designed especially for the manufacturing of silk fabrics have been brought out within the year. One of these is equipped with a take-up which operates without any chance of a starting mark. The other loom is designed for making heavy weaves. It is of heavier construction than most silk looms and is quite deep, thus affording more harness space and permitting more warp stretch.

An improved winder of simplified design has recently been developed for rayon and silk. It embodies a new method of driving the spindles, and eliminates the individual clutch and complementary parts for every spindle. A new twister equipped with a single vertical high-speed motor drive and a simplified twist-gear construction has been developed for the silk industry.

One of the recent developments in handling rayon is a new machine designed to facilitate the sizing of ribbon warps. It is rather a combination of warper, beamer, and slasher.

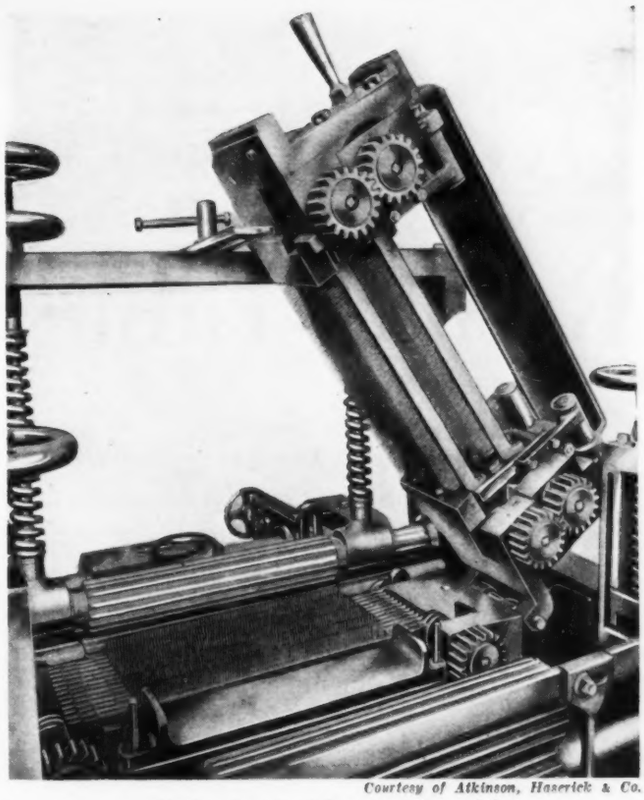
Probably the outstanding development in the knitting industry is the introduction of a number of single-unit full-fashioned hosiery machines. The inventors contend that it will prove very valuable to the industry by eliminating many of the difficulties now encountered in machines of this type.

There has been developed for the hosiery industry a wrap-stripe circular hosiery machine which permits an increased number of steps and colors. It employs three perpendicular color changes and is built on a spiral frame, thus affording the attendant spiral designing possibilities.

A fancy reverse-plated circular hosiery machine developed in England permits continuous production of fancy designs.

Intersecting Gill *Being Adopted by Bradford-Worsted Spinners*

By George Hendricks



Courtesy of Atkinson, Haserick & Co.

Faller head of intersecting gill

CONTINENTAL spinners were the first to take an interest in the shorter wools and to adapt them to worsted yarn manufacture. They gave to the industry a new system of manufacture, which made use of many new and improved machines, such as the rectilinear comb, porcupine draw box, intersecting gill box, and worsted mule. These machines are generally found together under one roof, and many have come to regard them as inseparable and for the exclusive use of the so-called Continental system of manufacture. This is to be regretted, as there are many features of this system which could be profitably applied to the English or Bradford method of worsted-yarn manufacture.

The intersecting gill box is a case in point. This machine was introduced about 40 years ago, but the ordinary worsted industry—that is, that section which uses Bradford machinery only—is just being awakened to the fact that intersecting gilling will fit very nicely into their layout and that its use will prove beneficial.

This machine controls short fibers without making use of back draft. The top set of fallers intersects the bottom set and inserts its pins into the wool irrespective of the relation between the back-roller surface speed and the speed of the pins. An increased draft can be imposed at the front of the machine without fear of the short fibers being drawn into groups or slubs, the reduced space between the nip of the front rollers and the fallers permitting more adequate control.

TABLE 1

Intersecting Gill Box

Carded	120 lb.
Top	18¼ %
Noil	14%
Top	108.5 lb.
Noil	14.5 lb.
Waste	1.5 lb.
Gain	4.5 lb.

Tear 7.48 to 1

TABLE 2

Ordinary Gill Box

Carded	120 lb.
Top	18¼%
Noil	14%
Top	105 lb.
Noil	17.2 lb.
Waste	1.5 lb.
Gain	3.7 lb.

Tear 6 to 1

The accompanying tables show in a comparative manner the results of several tests made both on intersecting gill boxes and ordinary gill boxes. The first test was made with only 240 lb. of 64s-quality carded sliver, weighed directly from the cards and divided into equal portions, neither being backwashed. The results are shown after adjusting the top and noils to correct conditions. See tables 1 and 2.

This small test was not considered conclusive, so further tests were made. It is pointed out that in these further tests the weighing was done when the gilled top was ready for combing. See tables 3, 4, and 5.

The straightening that fibers receive in gill boxes is not considered of great importance, yet this is sufficient to warrant any concern changing over from one type of machine to the other. Especially is this the case in intersecting gilling, for fibers left lying across the sliver and fed into the comb in this way take up a place in the noil instead of in the top. Lessons of this sort are very slowly learned in textile centers. This matter has been emphasized again and again in text books and articles, and yet these machines sell slowly.

In one large mill in a well-known worsted center, the ordinary gill box was the only type found in the plant. Machine makers and others had recommended the trial of the intersector, but the manager refused to discuss the matter. However, there came a change of management and instantly a change of policy; and intersectors were introduced. These new machines were used as strong boxes — i.e., the process immediately preceding Noble combing—and it was discovered that a better tear was obtained. Many such machines have now been installed, but the policy of that one firm prior to its introduction of a newer process is still being followed by many others.

TABLE 3

Intersecting Gill Box

Original weight of comb ball 299 lb.

Not backwashed

Top	261 lb.
Noil	41⅜ lb.
Waste	1¾ lb.
Total	304½ lb.
Gain	5½ lb.

Tear 6.25 to 1

TABLE 4

Ordinary Gill Box

Original weight of comb ball 299 lb.

Not backwashed

Top	243 lb.
Noil	48 lb.
Waste	2 lb.
Loss	6 lb.
Total	299 lb.

Tear 5.06 to 1

TABLE 5

Ordinary Gill Box

Original weight of comb ball 294 lb.

Oil combed.

Backwashed.

Top	250 lb.
Noil	46 lb.
Waste	2 lb.
Total	298 lb.
Gain	4 lb.

Tear 5.43 to 1

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Starting the Youngsters Off

Editor, Overseers' Round-Table:

I AM looking forward to the time when my son can get into the textile industry. I think that right now it is one of the most fascinating games that I know of, especially the hosiery business. With the chain stores "taking the bull by the horns", as they have been doing for the past several months, it is purely a game of the survival of the fittest, and any man who is able to steer his ship through the storm can certainly demand and get a good salary. Who wants a job where all is smooth sailing? And how can you expect to make a very good salary if there is no difficulty attached to your job? Anybody can drift downstream.

I certainly want to give my son better training for his job than I have had for mine and if I succeed in giving him a good education and send him to some good textile school for awhile I will have no fear for his future success. There are plenty of good paying jobs in the textile industry, in fact there are more jobs than there are men to fill them.

Automobiles and radios may come and go, but textiles are here to stay. So, lead your son in and get his feet wet.

S. L. HAVITY, Richmond Hosiery Mills

Editor, Overseers' Round-Table:

THE FACT that the textile industry is not generally prosperous is one of the major reasons why a son of mine, equipped with an engineering education and the textile instinct from three generations, would be strongly urged to enter this industry. He would not come into a mill with me, nor be palmed off on any friends in other organizations. He would find his own opening and his progress would be entirely up to him.

The more youngsters with engineering training who can climb up the industrial ladder that we can start in various capacities in the textile industries, the sooner we will drop our hide-bound ideas and policies and get our industry in a healthy business condition. Two actual instances with which I am acquainted will illustrate the point. One woolen mill was making fourteen warps and seventeen fillings in any combination ordered. A textile engineer analyzed sales and manufacturing and found that four warps and seven fillings constituted 85% of the business. He recommended dropping all others and concentrating on these four and seven. Immediately after, he was appointed treasurer and told to put his report into effect. The results were mill profits instead of former losses. In another case an industrial engineer was made managing executive of some spun silk mills during a depression. His first year resulted in savings of over $1,100 per day. Truly, textiles are calling the youngsters.

E. E. GAGNON.

Examining Textile Workers

"I NOTICE," said Superintendent Chase as he walked across the room to his chair, "that Bill over there is stewing and fretting about something. He acts as though he had eaten an electric eel. What's on your mind, Bill?"

"Well, even though I've secretly gotten the cussing out of my system," Bill said, "I'm still hopping mad. Just before the meeting I happened to come across an article in some paper which had a long song and dance about the 'pale, anaemic, mentally deficient workers of the textile industry.' This is not the first time that I've seen such tripe and I think that something oughta be done about it. I've batted around this textile industry for many years, and I know a lot of workers in other industries, and I'm here to say that textile workers, taken as a group all over the country, are just as good mentally and physically as any similar group of workers in any industry. Someone ought to take these sensation mongers who write about the awful textile help and teach them a few things, either through reason or through a stout baseball bat."

"I'm almost afraid to speak," Hank spoke up, "for fear Bill will get excited and take a swing at me, but since Pete isn't here today someone has to set Bill right. Okay, Bill?"

"Sure," Bill was forced to grin, "I talk big, but I'm harmless."

"Well," Hank went on, "you must realize that these birds who write that type of article think they have to be sensational to make the story interesting. However, you'll generally find that, although they over-write and make big things out of comparative nothings, there is a grain of truth in what they say. That's just the case with talk about textile workers. I admit that all this stuff about poor, broken wrecks is the bunk, but I still think it is a fact that textile workers are below the average. There are many reasons for this. One of the first industries, if not the first, to put on mass produc-

Watching Workers for Promotion

Editor, Overseers' Round-Table:

I BELIEVE all workers should have a chance for promotion, but no fixed rules can be given except as concern overseers or superintendents. Give every man an equal

as a Group

tion was the textile industry. That means monotonous work and not much chance for the worker to use intelligence, except in certain departments. Another point is that the making of textiles is so old that it has lost most of its glamour. Even though the man in the production line of an automobile factory does monotonous work he still gets a kick out of thinking that he is making a car. For these and many other reasons most textile workers come either from a class which has been under mass production for so many generations that they have forgotten how to think, or from those who haven't enough ambition to think or get excited about anything. As physical energy and mental energy go along together to quite an extent I'm sorry to have to give it as my opinion that textile workers are below the average in both respects."

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Do *you* believe that textile workers as a whole are below or above workers in other industries, physically and mentally?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

chance to make good, provided he has the ability to run a job.

A worker cannot expect promotion by spending time in pool rooms, picture shows, etc. Watch the man who takes the most interest in his work, does the most studying, and looks for something besides six o'clock and pay day. C.J.S.

Editor, Overseers' Round-Table:

THE ONLY man who objects to being watched over is the man whose conscience troubles him. One may well disapprove of a system which calls for keeping tab on his work if he thinks that his lack of energy or unfitness for the job he is holding may be so discovered.

The man who does his work faithfully and to the best of his ability should consider such a plan a heaven-sent one, whereby he stands a chance to show what he can do and what he is capable of.

Too many men, especially in the trades, have the false idea that being watched over means simply another form of slave driving. They believe that their employer is constantly on the lookout for minor errors which they may blunder into so that it will give the boss a chance to cut their wages or to discharge them for incompetency.

I believe that the contrary is true. It is unfortunate that every worker cannot be placed in a position where he could get the viewpoint of the executive offices. Employers are only too glad to find, among their help, a person who, by his ability, resourcefulness and energy stands out from the rest of the shop. That person stands all the chance in the world of being picked out for a better job the moment one is open. PHILIP DEL VECCHIO.

Editor, Overseers' Round-Table:

THE QUESTION of letting the employees know that they are being watched is alright.

It will bring the best out of the best and will be an attraction for all to look forward to if they have any ambition to get ahead. G. E. LANBACK.

Keeping Out Outsiders

Editor, Overseers' Round-Table:

I CERTAINLY do believe it is wise to take precautions against outsiders getting into the mill. Where the doors are wide open to anyone it usually creates a feeling of "don't care" among the workers, from super down to scrubber. Where conditions like this exist one usually finds machinery stopped that should be running, ends down, rollers lapped, help looking out the window, etc. We all know that a mill cannot live long under such conditions.

There should be a fence around the plant and a watchman (speaking of watchmen there are plenty of intelligent men in our organizations who have reached the age where they would appreciate a little easier work). First, this creates a feeling of business, and what we need more than anything else is more business inside the mill. Second, the overseers and second hands do not have to be policemen in keeping people out of the plant. You know one has to be very particular when asking a person to leave. If not diplomatically handled there may be a fight and I need not elaborate on the effects of such a happening. Third, the workers appreciate the protection and they know they can get out any time it is necessary.

Don't worry about the important customer. The harder it is for him to get into the plant the better he likes it—he is a business man. W. W. MORRELL.

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Summary of Discussion on Starting a Son in the Industry

By an overwhelming majority contributors stated that their belief in the future of textiles was such that they wanted their sons to enter the industry. The very fact that the industry was not on a profitable basis at present was used by many as a reason why intelligent, trained youngsters had a good chance to get ahead. A feature of the replies was the number who said they wanted their son, or sons, to have technical training, as given by textile and engineering schools, as well as practical experience. The few dissenting votes expressed the belief that the textile industry was hide-bound and backward, and didn't have much to offer.

Advance in Textile-Machinery Improvement Discussed at A.S.M.E. Meeting

CONSIDERABLE information and several worth-while suggestions regarding the present trend toward the improvement of textile-mill equipment, and the benefits which the industry may derive from it, were offered by members and guests of the Textile Division of the American Society of Mechanical Engineers at its annual meeting in New York on Dec. 2. The discussion followed the presentation of a paper entitled "Cause and Effect of Current Advance in Textile-Machinery Improvement," by E. D. Fowle, associate editor, TEXTILE WORLD. This paper was published in our issue of Dec. 5, page 28.

"The decided upward trend of improvements in equipment within the last few years," declared Eugene Szepesi, consulting textile engineer, New York, and author of *Cost Control and Accounting for Textile Mills*, "is of course a constructive element toward the betterment of economic conditions in the textile industry." But the ultimate results, he added, will be disappointing to anyone who expects to see a permanent economic restoration as a result of it. "If we ever hope for a permanent improvement," he said, "we must seek an intelligent and prearranged cooperation of the machine constructors, textile manufacturers, and engineers. . . . It is high time that a mechanical rehabilitation of the industry be undertaken through the cooperation of these three groups, properly organized, directed, and supported."

The speaker criticized the aged equipment, uneconomical operating units, and antiquated management methods by which the textile industry is handicapped. "The industry," he said, "should seriously consider a radical departure from the present conception of depreciation and hasten the total replacement of all its equipment which has proved uneconomical and no longer fulfilling requirements. With such a change it will be possible to create production units of more convenient and economical size than are operated at the present time and to eliminate the excessive equipment which is a main cause of the present plight of the industry."

Proper functionalizing of the duties of operatives, according to Mr. Szepesi, is one of the important needs of the industry. He referred to the spinning operation as an example and declared that "the method still used for functionalization, in which one worker is assigned to a definite set of machines and performs a great many service functions on that equipment, is as old as the invention of the water frame. The textile industry is backward because the machine manufacturers have not realized the necessity of making such minor changes in their equipment as will permit the use of functionalized operations to great advantage."

After pointing out the advantages which could be derived from more extensive use of materials-handling equipment, Mr. Szepesi concluded his remarks with the following statement: "I am of the opinion that the Textile Division of the American Society of Mechanical Engineers should be instrumental in the compilation of all probable, mechanical, and functionalization improvements and cooperate with the machine manufacturers in the realization of them."

Albert Palmer, of Crompton & Knowles Loom Works, Worcester, Mass., discussed the advance in machinery improvement from the equipment manufacturers' viewpoint. He pointed out that the period of activity in the loom field began in 1924, that the complete redesign of a loom costs between $75,000 and $100,000, and that even in one of the more simple models, such as the cone-harness non-automatic silk loom, there are 770 different pieces.

"As Mr. Fowle points out," said Mr. Palmer, "the mills in general do not realize that the selling prices of new machinery at the beginning do not include any profit or even a share of the development expense. In fact, until quite a substantial number of units have been built, the selling price does not even cover the factory cost, mainly because the plant has not been converted to the new line of manufacture.

"The chief problem of selling new machinery is to obtain a sympathetic hearing from the textile industry. While many mill executives are anxious to improve their methods, there are others who actually resist the efforts of machinery builders to introduce new ideas. Instead of welcoming the opportunity to cooperate, they place the burden of proof on the builder and force him to work under the most unfair odds. The result is that the builder is put to unreasonable expense, and sometimes, because of the opposition of mill employees, is obliged to withdraw from the project entirely.

"Mr. Fowle's statements with regard to the necessity for preventing an increase in the productive capacity of the industry are correct. So are those with reference to the matter of obsolescence and the handling of depreciation reserves. That more knowledge concerning these matters of cost is needed is demonstrated by contact with the industry."

Marketing of Cotton Goods to Be Studied by Foundation

COMMENCEMENT of a study dealing with the marketing of cotton goods was announced today by the Textile Foundation. This is the second of a series of distribution studies in the field of textiles authorized by the Foundation in recognition of the important role distribution plays in the modern business drama.

That every advantage and facility may be available, an advisory committee has been formed consisting of the following members:

Walter S. Brewster, chairman, Leavelle McCampbell, Robert T. Stevens and William E. Winchester, representing the Association of Cotton Textile Merchants of New York; Harry L. Bailey and G. Edward Buxton, representing the Cotton-Textile Institute; Fessenden S. Blanchard, representing the National Association of Cotton Manufacturers; George S. Harris, representing the American Cotton Manufacturers Association; George Hussey, representing the Textile Brokers Association; Henry G. F. Lauten, representing the Textile Converters Association; and W. L. Pierce, representing the National Association of Finishers of Cotton Fabrics.

This advisory committee is an enlargement of the original committee on distribution of the Association of Cotton Textile Merchants of New York which at the request of the Foundation began in the spring of 1931 a preliminary survey of problems of textile distribution. The promise of the full cooperation of all interests insures a report of great value and wide application.

The study will be conducted by the Harvard University Graduate School of Business Administration, under the direction of Dr. Melvin T. Copeland, professor of marketing.

Dr. Copeland has been closely affiliated with textile marketing problems for many years and is well known in the trade. His "Cotton Manufacturing Industry in the United States," written in 1910-1911 after a year's study of the industry abroad, has been widely used as a text-book. In 1919 he was secretary of the research committee of the National Council of Cotton Manufacturers. In 1920, under his guidance, the Bureau of Business Research at Harvard started a comparative study of the operating expenses of department stores. In 1923, that bureau conducted a survey of wholesale dry goods houses. In 1926, Dr. Copeland supervised a survey of the distribution of textiles.

▶ U. S. Now Chief Market For Italy's Raw Silk

The volume of orders from the United States, which have given some Italian reelers sufficient commitments to keep them occupied until the first of the year, provided a bright spot in the badly depressed Italian raw silk trade at the end of October, according to trade reports forwarded to the Department of Commerce by Trade Commissioner Elizabeth Humes, Rome.

During October the Italian silk market felt an unfavorable reaction from the lower exchange value of the pound sterling.

Jack Card Reluctantly Speaks for Farm Board

Editor, TEXTILE WORLD:

After the plough-under-every-third-row episode. I never thought I'd come to the defense of the Farm Board or any of its works. But a sense of fairness impels me to resent the broad implications made at the recent senatorial inquiry.

I don't know whether or not the general manager of the American Cotton Cooperative Association is really worth $75,000 a year. But the attempt of Senator Wheeler to dramatize the size of this salary by drawing out the information that the average income of cotton farmers in the South is $300 a year, was grossly unfair.

When there is a big job to be done in industrial reorganization, the salary of the man placed in charge of that job is not supposed to have any relation whatever to the average income of the workers in the industry concerned.

Would the Senator suggest a study of the ratio between his salary and the average income of his constituents?

JACK CARD

▸Canada's Silk Hosiery Sales Show Boom Growth

Information from an authoritative source in Ottawa, Ont., reveals the fact that the silk hosiery section of the Canadian textile industry has made decided progress during the last 18 months, and is now developing a big export business in South America and the British Colonies.

Dominion government figures reveal a 70% decrease in total importations of hosiery into Canada during the year ending in September, as compared with the same period of last year. The big decrease in importations, due to a higher tariff imposed, has resulted in an increase in production in the Canadian mills.

Information on Hosiery Gauges Explodes the "100 Gauge" Myth

CONSIDERABLE interest has lately been manifested by the trade in the very fine gauge hosiery and quite naturally the old "100 gauge" matter has again come to the front. Recently some of the leading Fifth Avenue (New York) stores held a special sale on what the store termed "100 gauge" and "100 fine" hosiery. The matter of relative gauges seems little understood by the trade, and Louis Hirsch Textile Machines, Inc., New York, have prepared a statement and table which clarifies the situation.

"To begin with," says this statement, "there is no such thing as 100 gauge. This '100,' no doubt, was originally a style number as was another number '50,' which were put on the hose by some French manufacturers of 44-gauge, 2-thread, hand-frame hose to distinguish these goods from other 44-gauge, 3-thread, power-frame hose.

"Of course, it can readily be understood how these style numbers, '50' and '100' placed where the gauge mark usually is, were seized upon as gauge numbers by buyers and advertising copywriters alike to augment the superlatives they used in describing these fine hose. As '44 fin' was numerically less than our American 48s, 51s and 54s, this gauge number was also sidetracked in favor of the designation '100 gauge.' The true French gauge for silk goods coming into the American market are 36 fin, 40 fin and 44 fin. American manufacturers use only the true English gauge such as 54, 57 and 60 gauge in contrast to the French method using similarly 36, 40 and 44 fin. Actually: 36 French fin gauge is equivalent to 49.37 English gauge; 40 fin to 54.85; 44 fin to 60.11. Any other number as 100, 150, 200, etc., in hosiery indicates (and is sometimes misleading) merely a number and not a gauge.

"The accompanying table gives the comparisons of the gauges under the different systems. The gauge, commonly in use in this country is that borrowed from the English system which technically is expressed as the 'number of two-needle leads in 3 English inches'—or since the needle bars at present are drilled and slotted and have therein individual needles, this should properly be translated into the number of needles per 1½ inches on the needle bar in the machines. For example, 45 gauge means 45 needles in 1½ inches or 30 needles per inch. This explanation also holds good for the other English gauges.

"It has many times been commented that the 'French 44' does not appear to produce as fine a stocking as some of our American product made on 54 and 57 gauge, and in some instances 51 gauge has been included in this comparison. Probably the only explanation for this apparent difference is because the French method of knitting silk hosiery is somewhat different from the American method, as every importer of French hose is well aware."

▸Chinese Boycott of Japan's Cottons a Real Factor

Warehouses of Japanese cotton mills are overstocked with finished goods, according to reports received by Marvin L. Shirley, manager of the Charlotte (N. C.) district office of the Bureau of Foreign and Domestic Commerce. The present boycott of Japanese goods by the Chinese has seriously curtailed the export of cotton products from Japan. Cotton mills in Shanghai, particularly those owned by Chinese, are operating at full capacity, but there is some apprehension locally that the Japanese-owned mills in that province will be forced to close. This would throw 60,000 Chinese workers out of employment.

▸Less Than Half Textile Companies Reported Profits

Income tax returns for 1930 were submitted by 13,985 corporations engaged in the manufacture of textiles. Of that total 5,401 had a gross income of $2,484,552,379. The net income of these corporations totaled $101,588,936. A total of 8,332 companies had gross incomes of $3,570,069,558, but incurred deficits amounting to $346,433,139.

Comparison of the Various Designations for Gauge Number of Full Fashioned Hosiery Machines

ENGLISH NUMBER: Number of needles in 1 English inch — 25.4 mm	10	12	13	14	15	16	17	18	19	20	21	22	24	26	28	30	32	34	36	38	40
ENGLISH GAUGE: Number of 2-needle leads in 3 English inches — 76.2 mm	15	18	19½	21	22½	24	25½	27	28½	30	31½	33	36	39	42	45	48	51	54	57	60
SAXON NUMBER: Number of needles in 1 Saxon inch — 23.6 mm	9.29	11.15	12.07	13.01	13.94	14.87	15.79	16.72	17.65	18.58	19.51	20.44	22.30	24.16	26.02	27.88	29.73	31.60	33.45	35.17	37.16
FRENCH COARSE: Number of 2-needle leads in 3 French inches — 83.34 mm	16.41	19.69	21.25	22.97	24.52	26.25	27.80														
FRENCH FINE: Number of 3-needle leads in 3 French inches 83.34 mm								19.71	20.80	21.87	23.00	24.06	26.25	28.44	30.62	32.81	35.00	37.19	39.37	41.58	43.74
Number of needles in 3 French inches — 83.34 mm	32.81	39.37	42.51	45.94	49.05	52.20	55.59	59.13	62.41	65.62	68.99	72.18	78.75	85.31	91.87	98.43	105.00	111.56	118.11	124.75	131.24
Number of needles in 100 mm	39.37	47.24	51.06	55.12	59.05	62.99	66.93	70.87	74.80	78.74	82.68	86.61	94.49	102.36	110.24	118.11	125.98	133.86	141.73	149.66	157.48

NEWS about MEN

W. Warren Barbour, of Rumson, N. J., has been appointed to fill the unexpired term of the late U. S. Senator **Dwight W. Morrow,** by Gov. Larson of New Jersey. Mr. Barbour is president of the Linen Thread Co., New York, selling agents for the Barbour Flax Spinning Co., Inc., with mills at Paterson and Kearny, N. J., and at Greenwich, N. Y.

George H. Whigham, chairman of the board of directors of both the Celanese Corp. of America and Canadian Celanese, Ltd., sailed on the "Aquitania" this week, concluding one of his regular business trips to this country.

J. Choice Evins, president and treasurer, Clifton (S. C.) Mfg. Co., and **Henry M. Cleveland,** president of the First National Bank of Spartanburg, have been elected to the board of directors of Arcadia Mills, Spartanburg, S. C.

Solon D. Bausher, former president of the National Association of Hosiery & Underwear Manufacturers, New York, was married to Elizabeth S. Greer last week in Reading, Pa. Mr. Bausher is president of S. D. Bausher & Sons, Inc., Hamburg, Pa., finishing plant, and treasurer of Glorie Underwear Mills, Eufaula, Ala.

Dr. Alfred E. Schwarzenbach, president of Schwarzenbach Huber Co., New York, returned to Zurich on the "Bremen" this week after one of his semi-annual trips to the United States. Mr. Schwarzenbach is also head of the parent company, A.G. fuer Unternehmunger der Textil-Industrie, of Zurich, Switzerland.

Henry Janssen, president of Textile Machine Works, Reading, Pa., and **Dr. John Livengood,** vice-president of the same company, recently completed a week's business trip through the South.

Henry P. Kendall, president of the Kendall Co., Boston, Mass., spoke last week at the twentieth anniversary dinner of the Taylor Society of which he is also president, at the Pennsylvania Hotel, New York. His subject was "The Challenge of the Day to the Taylor Society."

A. J. L. Moritz, vice-president of American Enka Corp., Enka, N. C., is returning on the "Statendam" which arrives Dec. 12.

John E. Bassill, vice-president of the Tubize Chatillon Corp., New York, in charge of sales and finance, now becomes vice-president and general manager, and will have charge of the entire organization under the president, according to reports confirmed last Tuesday. **F. C. Niederhauser,** who joined the Tubize company early last year on a part-time basis, will give his entire time to the company. It is understood that Mr. Niederhauser, who is a widely known rayon chemist, will have charge of plant operations under Mr. Bassill.

John Challis was elected vice-president of the National Fabric & Finishing Co., Boston, at a recent meeting of the stockholders. At the same time the board of directors of the company was reduced from nine to five and includes the following: **Charles C. Hoyt,** who is president, **Richard F. Hoyt, Jere A. Downs, Charles W. Hubbard, Jr.,** and **John Challis.** Before the reduction in the number, **Robert G. Stone** was a director and there were three vacancies. **Hugh McK. Jones** and **A. Garfinkel** were elected directors of the Lowell Bleachery, subsidiary of the National Fabric and Finishing Co., to succeed **Robert G. Stone** and **L. Richardson.**

Dr. Walter S. Landis, vice-president of the American Cyanamid Co., New York, has been elected chairman of the New York Section of the American Chemical Society for 1932. He succeeds Prof. Arthur E. Hill, of New York University.

Max Korff, former head of the departments of mechanical maintenance for the American Bemberg Corp. and the American Glanzstoff Corp., Elizabethton, Tenn., has resigned and will leave shortly for Germany after spending a few days in New York.

J. A. Pearson has resigned as secretary and treasurer of the Esmond (R. I.) Mills effective Dec. 1, because of ill health. He expects to spend the winter in the South and will then return to his home in Scarsdale, N. Y. Mr. Pearson was with the Esmond Mills for 22 years but had his headquarters at the New York office of Clarence Whitman & Sons, for the last 12 years. **F. Gilbert Hinsdale,** treasurer of the selling agency will replace Mr. Pearson as an officer of the Esmond company.

Albert Blum, general manager of the United Piece Dye Works, Lodi, N. J., was guest speaker at a luncheon meeting of the Broad Silk Manufacturers Division of the Silk Association of America, Inc., last week, at the Republican Club, New York.

Samuel Lightowlers, who has been selling agent at Boston for the Limerick (Me.) Mills for several years, has resigned. The Boston office of the company is being closed and goods will be sold direct from the plant.

George P. Haigh has become superintendent of the National & Providence (R. I.) Mills, of the American Woolen Co. He was formerly superintendent of the Annever Mill, of the Cleveland Worsted Co., Ravenna, Ohio, and at one time designer and assistant superintendent of the Puritan Mills, Plymouth, Mass.

O. L. Wagstaff has been appointed superintendent of the Anchor Mills, Huntersville, N. C. He was formerly superintendent of the Amazon Cotton Mills, Thomasville, N. C.

T. H. Burkhardt has resigned as general superintendent of the Burlington (N. C.) Mills group of weaving plants.

B. D. Cornell has succeeded **Anthony A. Amelotte** in charge of the Henry D. Bailey Mill, Inc., Hope Valley, R. I.

David R. Whitman, who recently resigned as sales manager of the substandard division of the Trojan Hosiery Mills, Indianapolis, Ind., has reconsidered and will continue with the company.

W. G. Grierson will join the Chicago office of Cannon Mills, Kannapolis, N. C. He has resigned from the Chicago office of the Consolidated Selling Co. **Gordon Heddell,** formerly of Dallas, Tex., has taken Mr. Grierson's place.

Textile Calendar

Wool Blanket Manufacturers, Quarterly meeting, New York, Jan. 14, 1932.

Textile Forum, N.A.C.M., for master mechanics, Chamber of Commerce Bldg., Boston, Mass., Jan. 14, 1932.

U. S. Institute for Textile Research, meeting of Research Committee, Chemists' Club, New York, Jan. 21, 1932; meeting of Executive Committee and Board of Directors, Chemists' Club, New York, Jan. 22, 1932.

Textile Forum, N.A.C.M., for overseers of warp preparation and weaving, Chamber of Commerce Bldg., Boston, Mass., Feb. 11, 1932.

Textile Forum, N.A.C.M., for overseers of dyeing, bleaching and cloth room, Chamber of Commerce Bldg., Boston, Mass., Mar. 10, 1932.

National Association of Hosiery and Underwear Manufacturers, Annual Meeting, Commercial Museum, Philadelphia, Pa., April 11, 1932.

Knitting Arts Exhibition, 28th Annual Show, Commercial Museum, Philadelphia, April 11 to 15, 1932.

Textile Forum, N.A.C.M., General Meeting for agents and superintendents, Chamber of Commerce Bldg., Boston, Mass., April or May, 1932. (Date to be set later.)

Second National Cotton Week, nation-wide promotional campaign, May 16 to 21, 1932.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

Miss Gertrude Vagler, stylist for Sulloway Mills, Franklin, N. H., for the last seven years, has resigned and will leave on Jan. 1. Miss Vagler has been engaged in the import and export business, and at one time was in the fashion department of *Vogue*. She was instrumental in introducing anklets, which have become such a necessary item for sportswear.

Thomas Ashton, formerly designer at the Dwight Mfg. Co., Chicopee, Mass., has accepted a similar position with the American Woolen Co., Webster, Mass.

J. W. Chatellier has become associated with the Crown Mills, Marcellus, N. Y., and will cover the Philadelphia and Baltimore markets for them. He was formerly with Strong, Hewat & Co., New York.

H. J. Ford, second hand of weaving at the National & Providence Mills of the American Woolen Co., Providence, R. I., has gone to the Globe Mills, Utica, N. Y., as overseer of weaving. **William Walsh,** formerly with the Mayo Woolen Mills Co., Inc., Millbury, Mass., has gone to that plant of the American Woolen Co., as overseer of dyeing.

S. A. Lovelace, formerly overseer of weaving, Dunean Mills, Greenville, S. C., has been appointed superintendent of the Puritan Weaving Co., Fayetteville, N. C. He succeeds **C. C. Fisher** who has been transferred to a similar position with the Sherwood Tapestry Mills, Inc., Burlington, N. C., another unit in the J. Spencer Love group of mills.

J. A. Donahoe has become associated with Joshua L. Bailey & Co., New York, in connection with selling the gray goods production of the Arcadia Mills, Spartanburg, S. C. He was at one time connected with Kelsey, Wilton Co., and more recently with Reeves Bros.

J. Frank Armitage, formerly with the Arlington Mills, Lawrence, Mass., Peerless Woolen Mills, Rossville, Ga., Terhune, Yereance & Wolff, New York, and Cleveland (Ohio) Worsted Mills, has become associated with the sales organization of William R. Lynch, operating in the Philadelphia, Baltimore, and Boston markets and among some of the New York trade. Mr. Armitage has had considerable mill experience and will assist in the styling.

Frank P. Graham, president, University of North Carolina, who addressed the meeting of Cotton Manufacturers Association of N. C. as reported on page 33

Frank L. Miller, president of United Hosiery Mills Corp., Chattanooga, Tenn., has appointed the following salesmen to sell direct for the mills: **Saul D. Fisher** and **Lester W. Nartnett** in the eastern division; **R. C. Stanley** and **B. B. Baylor** in the southern division, and **Nelson L. Hill** in the Pacific coast division.

F. F. McGovern, formerly with Pacific Mills, has joined the selling force of H. P. McKenney & Co. **E. S. Brown** has also joined the McKenney company; he was formerly with the Ardsley Textile Sales Co., New York.

S. Senner has joined the selling force of Widder Bros., New York. He was formerly connected with the firm of Senner & Seader, now liquidated.

Joseph Campbell, who has been manager of the Auburn mill of Dominion Woolens & Worsteds, Peterborough, Ont., Canada, has been transferred to the Forbes mill of the company at Hespler, Ont.

George Roland, who has been in charge of the Cincinnati office of the American Woolen Co. for many years, plans to stay in Cincinnati to represent mill and lining accounts. The Cincinnati office of American Woolen Co. has been closed.

Milton G. Erman, of the Chicago office of the American Woolen Co., has been appointed to succeed **Frederick Phillipson,** who has resigned as the head of that branch.

Frank Houseman, formerly designer for the Washington Mills, of the American Woolen Co., Lawrence, Mass., has been appointed assistant agent of the Wood Worsted Mill of the same company. Mr. Powell has become designer at the Washington Mill in his place.

Walter C. Brundage, who has been in charge of adjustments and collections for the Lyons Piece Dye Works, Paterson, N. J., for the last eight years, is winding up these matters for the company. He has not made known his plans for the future.

C. G. White has been named office manager of the Tucapau (S. C.) Mills to succeed the late **N. A. White,** who held the position for seven years.

Obituary

Albert R. White

Albert R. White, assistant general manager of the Mount Hope Finishing Co., of North Dighton, Mass., died at the Baker Memorial Branch of the Massachusetts General Hospital, Boston, Dec. 4, following a long illness. He was born in Boston in 1877. He attended the College of Liberal Arts of Boston University and after two years entered the law department of the same college, receiving the degree of bachelor of laws with the class of 1896, and began the practice of law as a member of the firm of White & White. Mr. White became attorney for the Mount Hope Finishing Co. in 1903. He was engaged to reorganize the employment and service department in 1916 and in 1918 was appointed assistant general manager. A large part of his time since then has been given to the finishing company's affairs. He was a member of the National Association of the Finishers of Cotton Fabrics, of the transportation committee of the Associated Industries of Massachusetts, and served as chairman of the joint arbitration committee of the National Association of Finishers and Converters, besides filling various minor posts in connection with textile affairs from time to time. He was interested in civic affairs and held various public offices. He was a Mason, an Elk and affiliated with the Unitarian Church. He is survived by his mother, widow and three children.

John Hill

John Hill, 57 years of age, textile engineer, died recently. He had maintained offices in Atlanta for 30 years and, at the time of his death, represented the Foster Machine Co., Westfield, Mass., Heine Chimney Co., Chicago, Ill., and was consulting engineer for the Swift Mfg. Co., Columbus, Ga. Mr. Hill did work for many prominent southern textile mills. He was a Mason, and a member of the Capitol City Club, and the Piedmont Driving Club.

Robert L. Huffines

Robert L. Huffines, secretary and treasurer since their formation in 1915, of the Rockfish Mills, Inc., Rocky Mount, N. C., with plants at Hope Mills, Clayton and Cumberland, N. C., died at his home in Rocky Mount Dec. 3, following a lingering illness. He was 58 years of age and was prominent in financial and industrial circles of eastern North Carolina. Mr. Huffines was a director of W. H. Draper & Sons Co., of Rocky Mount, sash cord manufacturers, and a director of the North Carolina Bank & Trust Co. He is survived by his widow, one son and five daughters.

William K. Leonard

William K. Leonard, head of the Piqua (Ohio) Hosiery Co., who retired when that concern merged with the B.V.D. Co., Inc., died recently at the age of 66 years. He was a former president of the Ohio Manufacturers' Association. He is survived by his widow and two sons.

NEWS about MILLS

Cotton

Star Thread Mills, Athens, Ga., have been purchased by C. L. Upchurch & Sons, Athens, from James White, general manager. Mr. White is also general manager of the Princeton Mfg. Co., Athens.

Swift Spinning Mills, Columbus, Ga., are remodeling and repairing their cotton warehouse at a cost of $4,000. One story will be added.

Indiana Cotton Mills, Cannelton, Ind., which have been operating on an average of one week in three, have announced through Lee Rodman, general manager, that production will be steady for at least five weeks. Employees have been given a 25% wage cut.

Davis Mills, operated by the **General Cotton Corp.,** Fall River, Mass., closed Dec. 3 for an indefinite time.

Kerr Mills, of the **American Thread Co.,** Fall River, Mass., have plans for power plant alterations and improvements to cost about $35,000. The new York office is in charge of the plans.

Shove Mills, Fall River, Mass. Mills Nos. 1 and 2, with all machinery and equipment, have been sold to Walter E. O'Hara, treasurer of the Textile Machinery & Supply Co., according to Thomas B. Bassett, liquidating agent for the creditors of the Shove company.

***Sanders Cotton Mill, Inc.,** formerly the **Aponaug Mfg. Co.,** West Point, Miss., will postpone the erection of a proposed new addtion, for which bids were recently received on the general contract.

Grace Cotton Mill Co., New York and Rutherford, N. C., has purchased 120 looms formerly used by the Dwight Mfg. Co., Chicopee, Mass. They will be shipped to Concepcion, Chile, to be set up in a mill there.

Naumkeag Steam Cotton Co. (Pequot Mills), Salem, Mass., owners of **Danvers Bleaching & Dye Works,** Peabody, Mass., have offered Poor's field, Peabody, for sale. The property includes eight acres and has a frontage of about 600 ft. on Washington St., with sidetrack facilities. The corporation is awaiting a report from Lockwood, Greene & Co., New York, relative to the adaptability of the old Ipswich (Mass.) Mills for a bleachery. Committees of business men and local officials of Peabody have called upon Naumkeag executives in an endeavor to influence them to continue operations at Peabody. Lower valuation for tax purposes is one of the critical considerations.

Anchor Mills Co., Huntersville, N. C., which has been idle for about two years, will be placed in operation before Jan. 1, according to an official of the company. The plant is equipped with 10,948 spindles and 427 looms, and was formerly engaged in the production of ginghams, handkerchief goods and other yarn dyed fabrics. O. L. Wagstaff, who has been superintendent of Amazon Cotton Mills, Thomasville, N. C., for several years, will be superintendent.

**Indicates previous mention of project.*

Wool

***Corinna (Me.) Mfg. Co.** Judge of the Supreme Court has accepted the report of Clarence H. Crosby, receiver, of Dexter, Me., and the plant will be liquidated.

Wittenberg Woolen Mills, Cedarburg, Wis., have been incorporated by J. Fred and Carl Wittenberg. The plant of the former Cedarburg (Wis.) Woolen Mills, of which Fred Wittenberg was treasurer, has been leased.

***Patons & Baldwins (Canada) Ltd.,** Toronto, Ont. The new spinning mill, recently completed, in which machinery is now being installed, will not be opened for active production until early in the new year.

Knit

Volunteer Knitting Mills, Athens, Ala. Expectations of some of the citizens of Athens indicate the opening of the knitting company around Jan. 1.

Chicago (Ill.) Knitting Mills have been opened for the manufacture of men's and women's sweaters and knit novelties, at 304 West Jackson Blvd. Morris August is head of the company; he formerly operated the **Flatbush Knitting Mills,** Brooklyn, N. Y.

Shane Mfg. Co., Evansville, Ind., has made plans for adding to the equipment and will make men's hosiery. A higher class product in all lines is planned.

Sulloway Hosiery Mills, Franklin, N. H., have leased the buildings and equipment of the old **Sulloway Mills,** following a meeting of stockholders and Directors held Dec. 4.

Universal Full-Fashioned Hosiery, Paterson, N. J. Harry Joelsen has been appointed as second receiver of the company; the other receiver is Henry A. Williams. They have been given permission to engage Gustav A. Hunziker as counsel, and also to continue to operate the plant until all unfinished goods have been completed.

Van Raalte Co., Dunkirk, N. Y. Another unit will be placed in operation early in the year as soon as the necessary machinery and equipment are installed in the mill leased from the Merrill Silk Co. at Dunkirk. The company is now employing upward of 800 workers but will take on more when the newly acquired plant is open.

Hudson Silk Hosiery Co., Inc., Charlotte, N. C. Plans for the installation of additional machinery have been announced by officials of the company. An addition is in the process of being built which will increase the floor space by about 31,000 sq.ft., where the throwing department will be located.

Loy Hosiery Mills, Gibsonville, N. C., recently began the operation of a new mill. Twenty split-foot 240-needle Banner machines were installed for the knitting of men's plain half hose.

***Alberta Knitting Mills,** Orwigsburg Pa., will be the name of the new branch plant of **H. L. Miller & Son,** Port Carbon, Pa., makers of cotton ribbed underwear. A more detailed account can be found in last week's issue of TEXTILE WORLD.

Guarantee Knitting Mills, Philadelphia. The Irving Trust Company, New York, will act as one of the receivers of the company; Stanley R. Stager is the permanent receiver. Liabilities are stated to be about $180,000, and assets, $30,000.

***Manning Hosiery Mills,** Philadelphia will be the name of the company, to be incorporated by Herman Mantell, who has just purchased the **Tulip Hosiery Mills.** Mr. Mantell has been a wholesaler of hosiery in New York for 15 years and expects to sell the entire output of the plant which he has bought in Philadelphia. The mill operates fourteen 42-gauge "Reading" machines and makes only full-fashioned stockings.

Rodgers Hosiery Co., Philadelphia. The first shipment of 45-gauge "Reading" machines has been received at the mill. They are equipped with attachments for producing every type of novelty and fancy full-fashioned lace and mesh stockings available. Some of the 39-gauge machines at the plant will be scrapped. The plant is in operation day and night at the present time.

Howard Hosiery Co., Sinking Springs, Pa. Work is rapidly nearing completion on the new addition, 75 x 75 ft., which will provide for expansion. William Lotz, Philadelphia, is the contractor. It is expected that construction will be finished in January.

Davenport Hosiery Mills, Chattanooga, Tenn., have been given until Dec. 22 to move from their present location to the new 11th St. addition to make way for the new federal P. O. building.

Grover Knitting Mills, Ltd., Montreal, Que., Canada. The construction of a five-story addition is proceeding satisfactorily, providing for 18,000 sq.ft. more floor space.

Silk

Sunray Silk Mill Corp., New Castle, Del., recently organized under state laws, has leased local industrial buildings, totaling about 10,000 sq.ft. of floor space, for a new mill for the manufacture of silk and rayon cloth in semi-finished state. Machinery heretofore used at the plant of John Hand & Sons, Inc., Wilmington, Del., has been purchased and will be moved at once to a new location. It is proposed to begin production by the close of the year. James T. Chandler is president and Walter Kemp, vice-president. Adolph Buser, formerly superintendent at the Hand mill at Wilmington, will be superintendent of new plant.

Brilliant Silk Hosiery Co., Inc., Bloomfield, N. J., has resumed operations, effective Dec. 7, following a short curtailment due to labor difficulties. The mill will be run on open shop basis in the future, with the wage level 10% in excess of the regular union scale.

Jefroy Silks, Inc., Paterson, N. J., have bought the mill formerly owned by the **Lambert Silk Mills,** at Honesdale, Pa. The Jefroy company is closing two of its Paterson mills and the new quarters will give the firm about 68,000 sq.ft. of floor space; plans include the installation of 350 or 450 looms. Production will be concentrated at the new plant.

Rayon

Viscose Co., Parkersburg, W. Va., will soon proceed with the installation of new boiler equipment and coal-pulverizing machinery at the power plant. Award for the equipment has been made to the Combustion Engineering Co., New York. Ballinger Co., Philadelphia, Pa., is architect and engineer for the work.

Finishing

Jewitt City (Conn.) Novelty & Textile Co. has organized a night force and is operating on a 24-hour schedule, six days a week. The company's patented printing machine is being adapted for the printing of linoleum from the roll instead of in flat pieces.

Robertson Bleachery & Dye Works, Inc., New Milford, Conn., is operating on a full time schedule.

***United Wool Dyeing & Finishing Co.,** Passaic, N. J. Louis A. Cowly, 663 Main Ave., Passaic, has been appointed receiver, and Sidney Alexander, 5 Colt St., Paterson, is solicitor for the receiver. Creditors of the company must register claims before Dec. 27. A receiver was appointed at the instigation of Adolph Hauptman.

Newport Silk Dyeing & Finishing Co., Inc., Paterson, N. J. John L. Connolly and Hugh B. Dickinson, as receivers, have been authorized to sell the land, building, and equipment of the company, subject to the confirmation of the court.

Standard Silk Dyeing Co., Paterson, N. J. Elias B. Leiby has been appointed third receiver and Alexander Patterson adjuster of claims. The other two receivers, on application of Robert F. Zeuner, are George A. Schultz and Charles A. Hannagan.

Hasco Dyeing Corp., Weehawken, N. J., has been organized under state laws with a capital of 100 shares of stock, no par value, to take over and operate the **Hasco Dyeing Co.,** with a local mill on Nineteenth St. It is understood that F. Klumpp will continue as head of the new organization.

Firth & Foster Co., Philadelphia, dyers and finishers of piece goods, has been placed in the hands of a creditors' committee. W. H. Williamson, Industrial Trust Co., is chairman, James Hulton represents the stockholders, and Walter M. Burkhardt, attorney, represents the creditors in the contingent contracts classes.

TEXTILE WORLD Cotton and Wool Index Numbers

WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver
July 31, 1914	100	100	100	100	100
1925					
January	215	213	211	229	221
April	219	234	230	241	235
July	216	217	216	239	227
October	216	212	212	227	220
November	219	215	216	229	222
1926					
January	215	213	211	229	221
April	181	193	198	211	202
July	173	184	189	202	193
October	178	186	193	197	192
November	178	187	194	197	193
1927					
January	178	187	190	197	191
April	177	182	184	193	188
July	180	183	183	193	188
October	185	185	189	194	190
November	188	186	188	195	191
1928					
January	194	193	186	195	192
April	199	206	198	198	199
July	204	206	203	197	200
October	197	197	203	198	199
November	199	196	201	198	199
1929					
January	199	198	201	198	199
April	187	189	198	197	195
July	169	170	188	197	188
October	164½	169	188	197	187
November	163	165	187	211	193
1930					
January	148	161	177	197	181
April	127	139	164	186	167
July	125	135	158	184	163
October	124	135	154	180	161
November	121	133	154	200	170
1931					
January	112	127	148	178	156
February	106	122	143	178	153
March	101	112	139	174	147
April	101	112	134	167	143
May	100	111	134	162	140
June	97	110	134	162	140
July	98	111	134	162	140
August	99	111	130	153	136
September	99	110	127	153	134
October	97	108	127	147	132
November	94	108	127	147	130

AGAIN of two points in cotton, and losses of two points in grey goods and three points in wool were the only changes in the index numbers for November. Cotton yarns, colored goods, wool tops, yarns and cloths maintained their October levels.

While the November averages in the cotton series compare favorably with those for the previous month, there was a slight easing off in the latter part of the month in cotton, yarns and grey goods; in the fourth week of November cotton had touched 50, or two points lower than the monthly average; yarns were one point lower at 83, and grey goods were a point lower at 73. Colored goods held steady at 112 throughout the month.

The only change in the wool indexes was a decline of three points in raw wool to 94, which loss occurred in the second week of the month. Tops maintained their October level of 108, and yarns and cloths held firmly at 127 and 147 respectively.

Inquiries regarding interpretation and use of these index numbers may be addressed to Statistical Dept., Textile World, 1427 Statler Bldg., Boston, Mass.

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Aver. for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January	192	197	195	173	184	187
April	196	194	193	180	187	188
July	197	183	185	176	181	182
October	174	189	193	178	186	186
November	167	180	184	174	178	179
1926						
January	167	175	177	162	170	171
April	153	163	161	155	158	159
July	149	149	151	141	146	147
October	106	141	147	144	146	143
November	103	137	143	144	144	141
1927						
January	107	134	140	140	140	138
April	118	136	143	142	143	140
July	143	149	156	145	151	150
October	168	176	184	169	176	176
November	161	169	176	170	173	171
1928						
January	151	163	166	166	166	165
April	164	160	160	165	162½	162
July	174	167	165	168	166½	167
October	157	161	162	164	163	162
November	159	165	162	164	163	163
1929						
January	162	166	158	169	163½	164
April	163½	164	157	173	165	165
July	149	160	149	166	158	158
October	147	160½	155	161	158	158
November	140	156	152	161	156	156
1930						
January	138	149	141	157	149	149
April	131	139	129	156	143	142
July	105	120	119	142	130	128
October	85	110	115	125	120	117
November	88	110	116	126	121	118
1931						
January	82	102	107	124	115	112
February	88	104	106	124	115	112
March	87	102	109	125	117	113
April	82	100	106	125	116	111
May	75	98	99	125	112	108
June	72	94	95	122	109	104
July	75	97	97	120	109	105
August	58	90	87	115	101	98
September	53	85	81	113	97	94
October	50	84	76	112	94	9
November	52	84	74	112	94	90

New Machinery *and* Processes

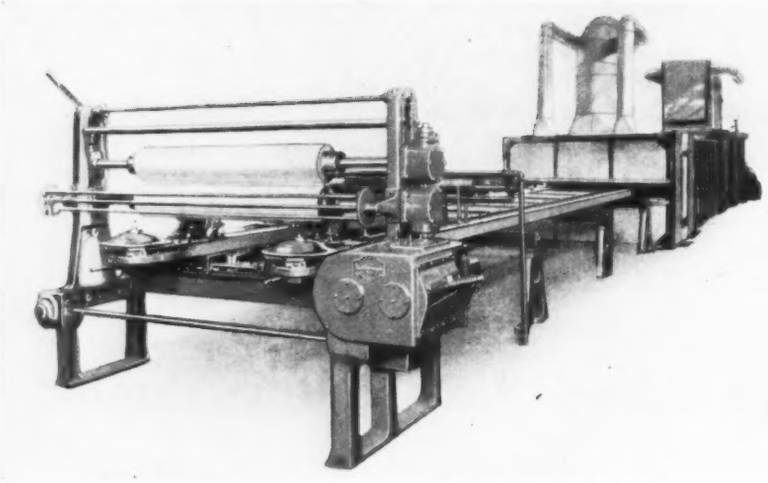


Fig. 1. Entering end of Sanforizer, showing feed-in rolls, fully enclosed gear-change boxes, tenter, and housing

Sanforizer

THE Sanforizer, a new machine for preshrinking fabrics under controlled conditions has been announced recently by H. W. Butterworth & Sons Co., Philadelphia, one of the machinery builders licensed by Cluett, Peabody & Co. to manufacture equipment employed in the Sanforizing process. This unit has been designed as a complete homogeneous machine, built for a single purpose. Unnecessary parts have been eliminated, the feed-in rolls incorporated as an integral part of the tentering unit, and other improvements made which are not found on older models. Preshrinking of woven fabrics to any desired degree with the Sanforizer is carried out according to the principles described in detail in a recent issue of TEXTILE WORLD ("Sanforizing Process Permits Controlled Preshrinkage of Woven Fabrics," Sanford L. Cluett, Dec. 5, 1931).

Among the major improvements which have been made in this equipment are included fully enclosed gear-change boxes for the rapid and easy control of shrinkage, auxiliary mechanical equipment applied to the Schwartz electric guiders to give ease of adjustment and to eliminate play, and changes in the atomizing nozzles to permit economy of air consumption and better atomization of water. Electrically controlled valves have been incorporated so that the sprays will automatically shut off when the machine is stopped.

The standard Butterworth heating and drying equipment has been adapted to the special requirements of Sanforizing, so that the system can be adjusted for any degree of temperature or air flow which may be needed for a wide range of fabrics. The dryer is also designed to give uniform drying of the fabric from selvage to selvage, while vestibules at each end prevent hot air from entering the room. To insure smooth operation of the machine, radical changes have been made in the main drive; at this point all jack shafts, chain drives, and other speed changes have been eliminated, the main driving shaft of the tenter being driven from an adjustable-speed motor through a worm-gear reduction. This arrangement gives a threading speed of 10 yd. per min., and an operating speed ranging from 20 to 80 yd. per min., in 3-yd. steps. It also is designed to eliminate lost motion in the transmission of power to the various working parts of the entire range. Pushbutton control is provided at all necessary working points. In addition, the drive for the feed-in rolls on the filling-shrinkage end of the unit has been simplified, all gearing and mechanical variators being in full enclosed oil-tight casings.

Improvements on the finishing cylinder (or Palmer) and its auxiliary equipment include replacement of the old-style disk-and-pulley drive with a set of change gears which are fully enclosed. Refinements have also been made in the method of machining and grinding the heating irons at the feeding-in end of the cylinder to allow close tolerances. A hand clutch has been provided which makes it possible to disengage the Palmer and still leave it in gear to maintain proper shrinkage. Blanket rollers are chromium plated; and the main cylinder blanket-driving cylinders and other moving parts are mounted in ball or roller bearings.

Other features of the Sanforizer include Alemite lubrication; Hyatt roller bearings and SKF ball bearings; Lewellen variable-speed transmission; Link-Belt positive drives of silent-chain, roller-chain, and herringbone-

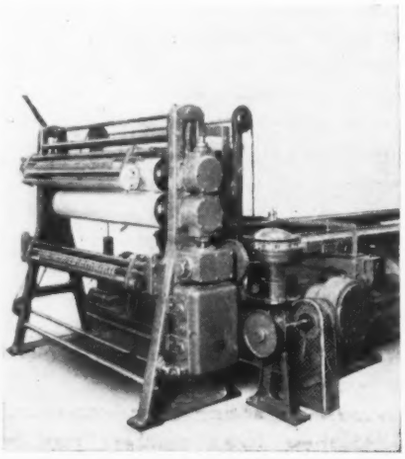


Fig. 2. Delivery end of tenter illustrating feed rolls, compensator, variator, and atomizers

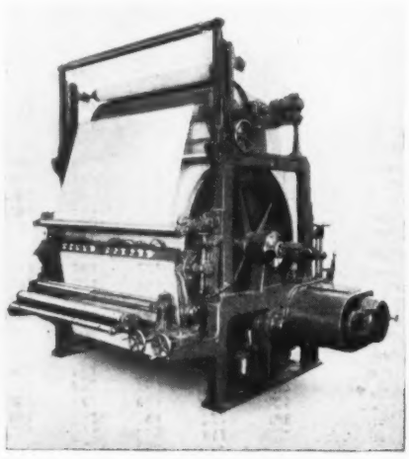


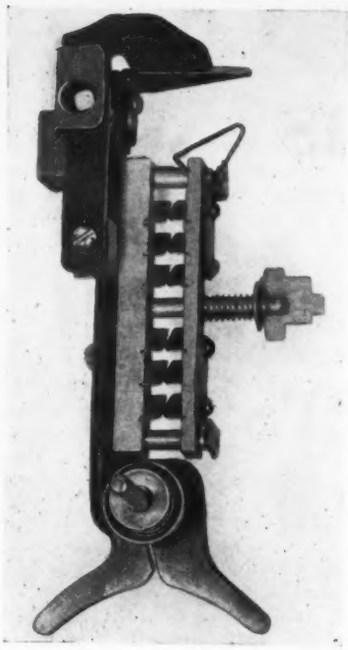
Fig. 3. Finishing cylinder, or Palmer, showing electrically heated iron, and adjustable tension and scrimp rolls.

gear types; Phillie speed-reducing units and gears: Reliance adjustable-speed motor; and Condor rubber-covered rolls.

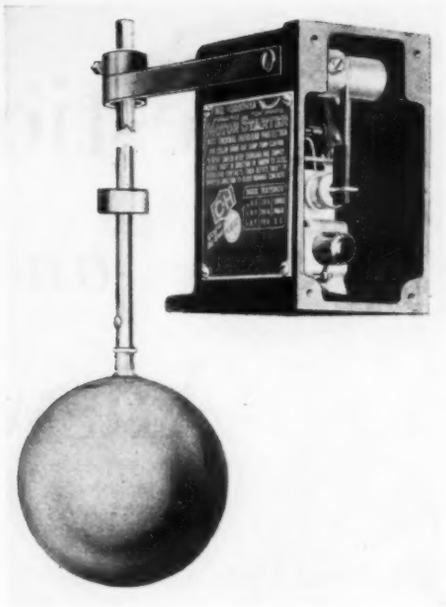
Yarn Cleaning Device

FOR the purpose of removing dirt and trash from cotton yarn, Eclipse Textile Devices, Inc., Elmira, N. Y., have improved their yarn cleaning device, so that its efficiency is increased. This small contrivance can be attached to most makes of yarn-winding machines.

Its purpose is to augment the work of the card in freeing the yarn from objectionable foreign matter. It is stated that a cleaner yarn results from the use of this device than when double carding alone is practiced. The yarn is caused to pass between two sets of extending plates or fins, each of which carries a notch in which the thread runs.



Improved yarn cleaning device



Motor starter for drain pumps and similar equipment

Electric Warp Stop Motion

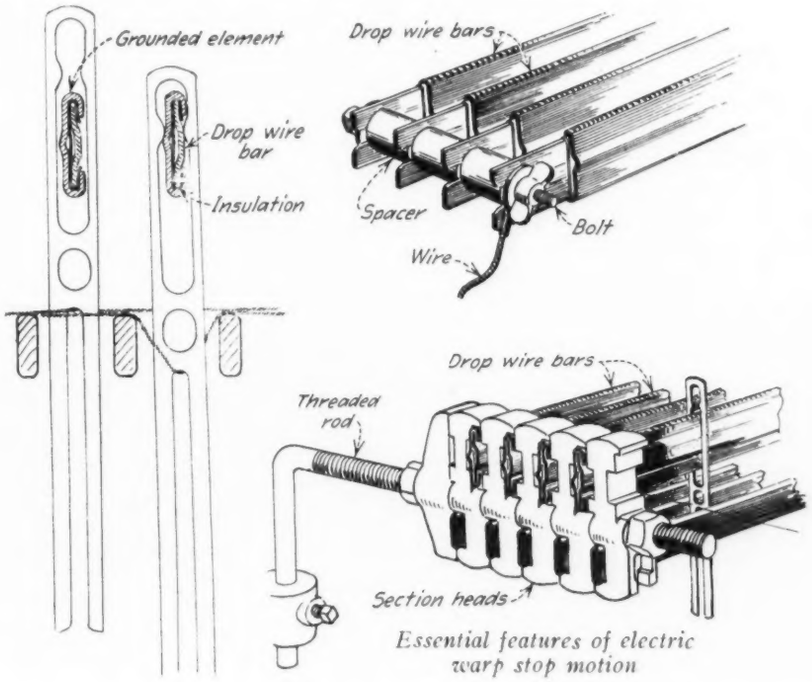
INVENTIONS and improvements in electrical equipment have permitted Crompton & Knowles Loom Works, Worcester, Mass., to re-enter the field of electrical warp stop motions. Their most recent efforts in this respect have resulted in what is claimed to be a greatly improved device and one which has overcome the disadvantages attributed to the old type.

In addition to being able to stop the loom in any desired position and of being simple in operation, two additional advantages are claimed by the manufacturer. It is cited that each motion is independent and that each is entirely sectional. Due to the use of individual transformers, utilizing alternating current with low voltage, converters or generators are eliminated. Any number of bars from one to twelve can be used as desired.

There are several novel and interesting features connected with both the drop wires and the drop-wire bars. In the accompanying illustrations it will be seen that the design of the wire is such that it need not be placed on the warp in any particular position; that is, there is no back or front to the wire. This is also true of the bar, which consists of two members insulated electrically from each other. The outer member is grounded to the frame, and the center member is connected to the other center members of the bank as shown. The drop wires are said to be indestructible, and it is stated that there are no springs or contacts to oxidize or vibrate.

One of the features stressed by the manufacturer is the knock-off box equipped with a solenoid. When the drop wire has fallen and has acted as a switch to close the electrical circuit, the knock-off box comes into play and stops the loom in any desired position.

The power supply is said to have been improved and simplified by the use of the new textile transformer unit. This single piece of apparatus fits directly on the loom motor-switch and has a single armored connection extending to the loom stop-switch. It contains no moving parts and has a locked-in fuse, removable from the outside.



Essential features of electric warp stop motion

Float-Operated Motor Starter

FOR small a.c. and d.c. motors on cellar drains, sump pumps, open tanks, and similar applications, a new float-operated motor starting switch is announced by Cutler-Hammer, Inc., 309 North 12th Street, Milwaukee, Wis. This instrument, which is small in size, provides across-the-line starting and thermal overload protection. For larger motors, this same device can be provided without overload protection, so that it can be used as a master switch for the control circuit of a separate automatic starter. It can also be used as a lever-operated master switch.

This is a single-pole starter with double break, having silver contacts to assure continuous current carrying capacity. The manufacturer states that the operating lever and shaft are reversible in the case; and the operating lever can be shifted to any angular position of the shaft, so either tank or sump operation can be obtained with the starter mounted in any position.

The thermal overload relay is designed to protect the motor from burnout and unnecessary blowing of fuses. Maximum ratings for this float-operated motor starter are—a.c., ½ hp., 110 or 220 volts, single phase; d.c., ⅛ hp., 115 volts.

Questions . . . *and* Answers

Back-Filled Cotton Sheeting Uneven

Technical Editor:

We have been in the custom of putting a heavy back sizing or filling on the low-count cotton sheeting, such as a 44-in., 48x48, 6.40, and are inclosing herewith two samples showing the best results we have produced so far.

The formula we have used for filling is as follows: Water, 200 lb.; thistle gum, 24 lb.; china clay, 25 lb.; and corn starch, 12 lb. These ingredients are assembled in an open tub and are boiled or cooked for a period of approximately 6 min. by means of a live steam line. Immediately after cooking, we spread the compound directly on the back of the cotton cloth—which may be either dyed or undyed—by means af a $\frac{1}{8}$-in. doctor knife.

The compound is dryed in passing over a two-roll set of slasher cans, one roll being 7 ft. in diameter and the other 5 ft. in diameter, both faced with copper. After the filling operation, the stock passes through a dead-weight calender before going to the next department for coating the face with Pyroxylin.

In view of the fact that the Pyroxylin is spread on one side and that it will not adhere to the cotton cloth if the cloth has been filled, it is necessary that this filling does not come through the weave and out on the face side, which would prevent anchorage of the Pyroxylin film.

You will notice from the enclosed samples that there are many small holes that will allow the light to shine through, showing that we have not completely closed the interstices of the cloth.

Could you supply us with a formula or any data that would give us a complete filling? We should, of course, like to be able to utilize our present equipment. Possibly you know of some higher-strength gums that would carry additional loading material. (7752)

We have examined this fabric, and it appears to us that the voids or unfilled interstices are due to uneven application of the back-filling coat. This may be caused by too close a setting of the doctor blade, which prevents an even flow or distribution of the back-filling compound.

The roll or net beneath the doctor blade may not be smooth, and its surface may be sufficiently irregular to cause a jumping or skipping action that would interfere with a smooth, even spread of the compound. The fabric may not be properly conditioned to absorb the compound evenly.

Knots, gouts, or thick and thin yarn may interfere with the even spread of the compound. Where the subsequent coating with Pyroxylin is so dependent on the uniformity and evenness of the back filling, we would suggest that the goods be thoroughly prepared before back filling. By this we mean that you should take the dyed goods directly from the dry cans before they have had time to take on moisture, and calender them to lay the knots, gouts, etc. This will make the sheeting more uniform. Undyed goods should be run through the dryer and calendered before back filling.

We are of the opinion that your present formula can be improved. We feel that the amount of corn starch should be increased to at least 8 oz. to the gallon.

Six minutes is hardly long enough to cook the starch and gum thoroughly. We suggest that the ingredients be mixed with cold water for 20 min., brought to a boil in 20 min., and boiled for 15 min. The addition of a soluble wax or some other type of softener will assist in making the compound smooth and give it greater affinity for the fabric. We would suggest adding about 5 lb. of a soluble wax or a good 50% sulphonated tallow to this mixture.

The filling is very free from dusting and shedding, and the softener is not needed to accomplish this purpose; but we feel that it would be an aid in penetration and uniform distribution or spreading of the back-filled coating.

It might make the fabric a little more attractive if a little dyestuff were added to the back-filling compound to eliminate the dullness due to the starch and gum.

A back filling as heavy in consistency as this should be, requires cooking in a kettle having mechanical agitation. It does not need to be heated with indirect steam. We believe that the present equipment, such as dry cans, etc., can be utilized to prepare these goods properly; but we believe the mechanical means of preparing the back-filling solution should be improved.

▼

Rubber Content of Elastic Webbing

Technical Editor:

I should appreciate your giving me the best and quickest method of knowing how many pounds of yarn and rubber would be used in an order of 1,000 yd. of elastic webbing. (7735)

The only way of determining, with any degree of accuracy, the weight of yarn and rubber required for any amount of elastic webbing is by proportion. A small sample of the material, (2 in., 3 in., or 6 in.) is measured, weighed, and dissected. After dissection, the yarn and rubber are weighed separately; and as the weight of each is to the weight of the sample, so will be the proportion of yarn and rubber in any weight of webbing. The scales used for weighing are grain scales capable of weighing to 1/10 of one grain, or 1/70,000 of a pound.

▼

Streaks in Knit Fabric

Technical Editor:

We are enclosing herewith a piece of ribbed cloth, knitted on a twelve-cut machine out of 1/16s slub-dyed worsted yarn. Please note that there are streaks on the inside of this cloth, while the face is quite smooth. (7736)

As far as can be determined from this piece of ribbed cloth, the streaks are caused by unevenness in the yarn. The streaks appear where the yarn is thick and full, causing the stitches to be larger at these spots than where the yarn is smooth. The same condition occurs on the face of the fabric as on the back, but the wales in ribbed cloth appear tighter on the back. Therefore the bulky stitches and streaks are more prominent on this side of the fabric.

▼

Rusty Needles in Silk Knitting

Technical Editor:

We are forwarding two cones of silk, one of which has mildewed considerably. A number of rusty needles have been inserted in this cone. The other is apparently satisfactory and has not mildewed. Also we are sending a bottle of the oil that has been used for oiling the needles. Can you detect anything in either the silk or the oil that would cause the rusty condition of the needles? Will you also give us your opinion as to the cause of the mildew and a method to prevent it. (7738)

We have examined the sample of needle oil and the two cones of silk. You state that the cone in which the

needles are thrust is mildewed and the yellow-tinted cone is apparently satisfactory. We find evidence, however, of mildew in the yellow cone as well as in the pink-tinted cone. Both cones have a decidedly musty, mildewed odor.

We have tested the needle oil and find that this has a paraffin base and is apparently a bone-filtered oil, rather than an acid-treated oil. It has a gravity of 28.8, which definitely places it in the paraffin-base group. We have tested it for mineral acid and find that there is absolutely none. The bloom of this oil also leads us to believe that it was bone-filtered and is not of acid-treated stock. There is no mineral acid in this oil or in the free-fatty-acid content; that is to say, the acidity due to the saponifiable oil is only 0.3%, which is not sufficient to cause any rust.

We do not believe the needle oil is at all responsible for this rusty condition or that it has anything to do with the mildew. We believe this to be an indication of the presence of considerable salt in the silk. We cannot tell whether this salt came from the soaking oil with which the silk was thrown or whether it was salt that carried through from the zeolite water-softener. We should carefully examine the soaking oil used in throwing this silk to determine whether it contained a high percentage of salt either in the form of sodium chloride or glauber salt, and we should further test this soaking oil for water-absorbing substances. It would be well to examine the water in the emulsion trough of the knitting machine to see whether there is any salt present in this water.

Occasionally a zeolite water-softener will not be sufficiently backwashed after regeneration, and an amount of water that contains considerable common salt goes through to the storage tank. Furthermore, if the water being treated by the softener contains considerable calcium chloride or calcium sulfate, it would come out of the water softener with these respective salts converted into sodium chloride and sodium sulfate. These salts will, in the absence of a rust-protective film, cause the needles to rust.

We suggest the use of a heavier needle oil and one that contains a greater portion of saponifiable matter than the one now in use, as we believe this oil would stick to the needles better and would not be so readily wiped off by the wet silk.

It must further be borne in mind that these cones of silk are of the open-wound type, and evidently the silk is soaked in the cone and not backwound. This of course makes it wetter than silk which is backwound, and consequently there is more water on the yarn and a greater tendency to wash the needle oil off the needles, so that the bare needle will be susceptible to rusting.

By checking up on the above points, we believe you will be able to locate the source of your trouble. It might be well to oil the needles more frequently.

The best condition for the development of mildew is a temperature of approximately 60° F., a moist atmosphere, and the absence of light. In soaking silk, nothing should be used to prevent mildew which will interfere with subsequent processing. Sodium benzoate, phenol, salicylic acid, and some of the fluoride derivatives have been recommended as mildew preventives for use in soaking baths; and they also can be used in making up the backwinding solution. Where sodium benzoate is used, the bath must be kept alkaline in order to keep the chemical in solution. About ¾ lb. is necessary in an 80-gal. bath. When any of these materials are used, they are dissolved and added to the water of the soaking bath before the oil, or soap and oil, are added. The amounts of the other soaking materials remain the same.

There are a number of preparations on the market for preventing mildew which are giving excellent results. These are supplied both in liquid and powder form, about ½ to 1 lb. being added to the soaking bath.

▼

Strength of Cotton Ply Yarns

Technical Editor:

Can you tell us if there is any method of figuring the strength of a three-ply cotton yarn if the strength of the single is known? Will it be simply three times the strength of the singles, or do other factors enter in? (7765)

Reliable tests conducted by various textile laboratories indicate that in addition to multiplying the strength of the singles by three, a factor of 10% should be added. It is presumed that this figure will make allowance for the additional strength imparted to the ply yarn by the insertion of the ply twist. The following example may clarify the matter:

Size of single yarn, 30s. Breaking strength, 57 lb. Break of ply (3) yarn $= 57 \times 3 = 172 + 17.2 = 189.2$ lb.

▼

Uneven Edge on Elastic Tape

Technical Editor:

We are weaving a honeycomb elastic tape, but so far we have been unable to get a smooth edge. We do not know whether this is caused in the weaving or the finishing and are herewith enclosing samples of this tape. One sample is marked "not finished" and the other sample is marked "finished," and you can readily see by looking over these samples that the former seems to have a smooth edge while the latter appears to be rough and uneven. These two samples were woven with the same shuttle. We used the following material in weaving this elastic: high grade 80/2 combed peeler cotton yarn; 34-count red rubber for warp; 300-denier first quality rayon yarn for filling.

We also used glucose and Swiss gum for sizing and might further state that the rayon yarn is purchased in the bleached skeins. We dye to whatever color is needed. After this yarn has been dyed, it is oiled. We shall appreciate any information you can give us on this subject. (7749)

Inquiries should give the fullest information possible; and if damaged material is involved, a sample should be sent. We give no consideration to anonymous inquiries and do not undertake routine analysis of yarn or fabric, or investigation involving unusual expense.

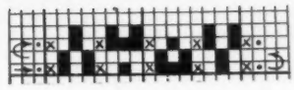


Fig. 1

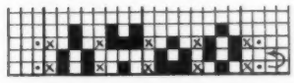


Fig. 2

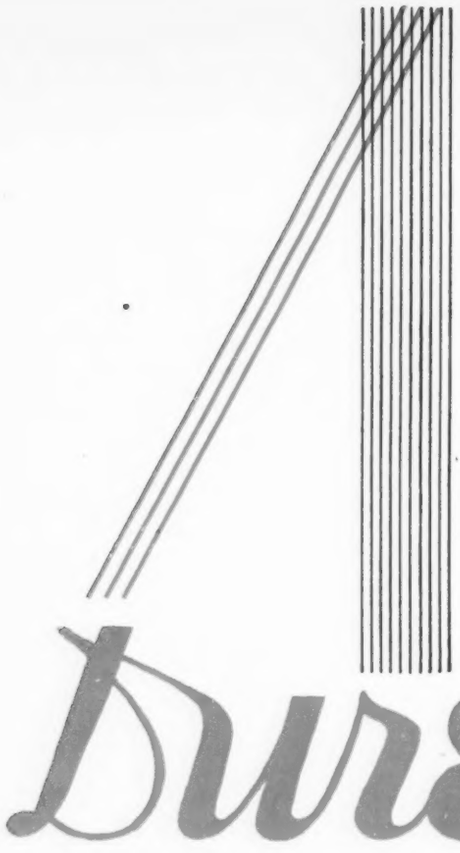
In our opinion your trouble lies in the weaving and may possibly be attributed to two causes. First, your design is wrong. As now designed, the outer binders at either edge weave identically; and when this is done with a $\frac{2}{2}$ rib weave such as you are using, the shuttle must return through an open shed at one edge. When this method is followed it is often impossible to control the edges; and the result is not only uneven edges, but also a decidedly curved material, as in the present case. The reason for the curve is that the filling binds the rubber more tightly at the edge with the open shed, and the tightly bound rubber is not permitted to contract as easily as the rubber on the opposite edge. The fallacy of this weave may be demonstrated by attempting to weave the warp after extracting the rubbers and the edge wires. You will find that one edge will not weave at all.

The remedy for your trouble is to draw the binders of one edge on a separate set of harnesses and cause this set of harnesses to interlace one pick later or one pick earlier than the other set. This will make a minimum of five harnesses instead of three, or, with the rubbers drawn on a separate harness, six instead of four.

Fig. 1 shows the weave now employed. Fig. 2 shows the proper interlacing.

Another source of trouble may be the edge wires. The appearance of your webbing indicates that you are using edge wires, but we question if they are coarse enough. We would recommend trying edge wires two or three sizes coarser than those you are now using.

Your construction seems satisfactory, as does your finishing formula.



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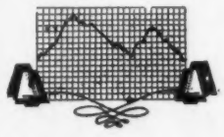
TEXTILE WORLD ANALYST

Wools Likely to Be Moderately Weak for Month or Two

By Dr. L. H. Haney

SUMMARY

Ease in foreign prices, a declining trend in domestic consumption, and sluggish buying of goods, will tend to prevent any considerable rise in raw wool prices. Further ease is likely during the next month or two. Yarn and cloth prices do not appear to have completed their downward readjustment.



THE world supply of raw wool promises to remain "easy." Estimates indicate a clip for ten of the chief wool producing countries of about 4% above last year. An easy supply situation at the beginning of the season and an increased clip have not been offset by an adequate increase in world consumption. Domestic stocks are said to be less than last year, but this is largely a result of a high tariff, and the same can not be said for all countries.

General business and financial conditions do not yet show signs of permanent improvement. Restoration of consumer buying power is an event of the future. Commodity prices in general are still receding and are lowering the "normal" for raw wool prices. The profit situation is one which points to the advisability of curtailment, since the restriction of supply during the strike failed to halt the decline in woolcloth prices or "replacement margins." A better tone was evident in the raw wool market after the strike was settled, but that means that manufacturers are in danger of narrowing their margins further. Demand and supply condition, therefore, do not yet indicate a reversal of the trend of raw wool prices. Wool markets are likely to remain easy until more fundamental improvement appears in demand conditions, and in general business.

Favorable Factors

1. Australian raw wool markets were strong; the rise in prices more than offset currency depreciation. London auctions opened at par to 10% higher on a dollar basis.

2. Australian and South American wools are believed to be above parity with similar domestic grades; London is at parity with colonial wools.

3. The new clips in Uruguay and New Zealand are estimated to be smaller than last season.

4. Activity in wool manufacturing on the Continent and in England increased during October. Consumption of raw wool in Great Britain during October was 5,000,000 lb. more than in 1930.

5. Stocks of tops in continental commission combing establishments at the end of October were below those of the same date during the last three years.

6. Stocks of raw wool in the United States are believed to be less than a year ago; stocks of foreign wools are the lowest in years. A large portion of the stocks in the hands of dealers, reported as of Oct. 15, has been sold. There is a limited supply of certain grades.

7. Raw wool imports continue small.

8. The settlement of the Lawrence strike led to increased purchases of raw wool.

9. Consumption of raw wool for the first ten months of the year exceeded that in 1930.

10. The replacement margin of the average spinner improved slightly during October and November.

11. Dealer stocks of overcoatings are reported small.

12. More men's and boys' clothing was cut during September than last year.

Unfavorable Factors

1. The sharp decline in sterling exchange caused the dollar value of raw wool at London to drop below that of the previous series. Recent sales in Australia favored buyers of certain grades.

2. During November raw wool, tops, and yarns in England lost practically all of their October gains, when figured at the respective rates of exchange.

3. The world production of raw wool during 1931, based on estimates from ten leading countries, is 2,669,000,000 lb. or 4% above last year.

4. Stocks of raw wool at selling centers in the southern hemisphere are larger than in 1930.

5. Surplus wool stocks in Great Britain (excess of imports over consumption since January 1) at the end of October were 121,000 pounds larger than a year ago.

6. Average daily mill consumption of raw wool in the United States during October declined more than normally.

7. All branches of machinery activity declined sharply in October; cards and combs suffered the largest percentage decline on record from September to October; worsted spindle activity was the smallest since early 1921.

8. The replacement margin of the average manufacturer in October is estimated to have been the lowest in any recent year.

9. Ample stocks of men's suits in retailers' hands.

10. Price cutting of men's-wear goods has not stimulated business to any considerable extent. Unseasonable weather has slowed demand for heavyweight goods; lightweight buying is being postponed.

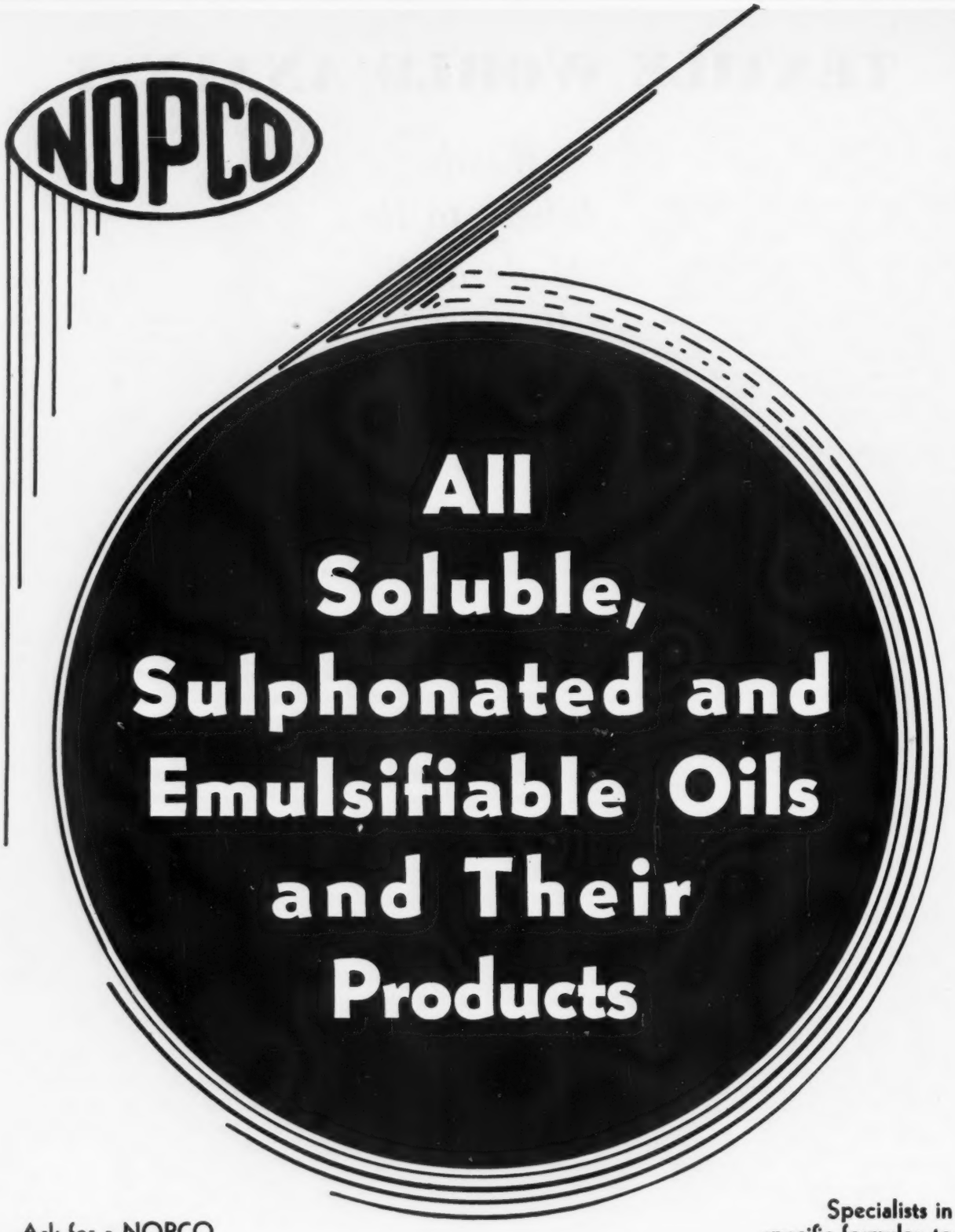
11. Numerous failures and restricted credits.

12. Further declines in security prices, commodity prices, and general business activity.

Appraisal of Factors

A critical appraisal of the foregoing factors makes the situation in the wool industry appear slightly less favorable than a month ago. Of course, this is partly due to the drastic curtailment caused by the Lawrence strike, and the decline was probably checked in November after the strike was settled. Great Britain, on the other hand, appears to be maintaining her mill activity through November, following the increase in October. But prices are easier, and indicate that demand is insufficient to offset the easy supply situation in raw wool. Resumption of activity following the strike has tended

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.



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to harden prices in this country, but the stimulus of an active goods market is lacking. Moreover, the manufacturers' replacement margins have narrowed further and do not furnish the basis for a sustained expansion of activity. The raw wool market seems likely to be moderately weak for another month or two.

Statistical Position

The Textile World index of raw wool prices during November fell to a new low for recent years. The index was about 49.6% of the average for 1921-28, against 51.1% in October and 63.8% a year ago. The rate of decline was a little faster than in October.

Our index of the average daily mill consumption of raw wool, which is adjusted for seasonal variation, was sharply lower in October. It fell to 80.0% of the average for 1921-28, which compares with 99.5% a month ago and 76.3% last year. This was the poorest showing made since February; and reflects the effect of shutdowns during the strike.

Imports and receipts have declined and are below their average relationship with mill consumption. This suggests that stocks are probably declining, and is in line with trade reports. Most of the arguments, however, that there will be a shortage of domestic wools by the end of the season, assume that the rate of mill consumption will equal that of the average for 1931 to date. The evidence points toward a lower rate of consumption that that for the earlier part of the season, and insures against a general shortage, even though a few particular grades may be in limited supply.

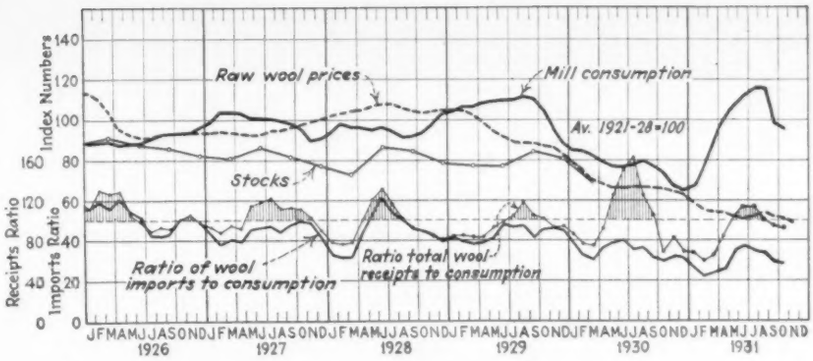
Index Numbers
Raw wool prices
Mill consumption
Av. 1921-28=100
Stocks
Receipts Ratio
Imports Ratio
Ratio of wool imports to consumption
Ratio total wool receipts to consumption
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Fig. 1. RAW WOOL BAROMETER:

Price—Textile World Index; Mill Consumption — Grease equivalent, average daily adjusted for seasonal variation, three-month moving average; Stocks—U. S. Total, grease equivalent, end of quarter, adjusted for seasonal variation. Ratio of Total Raw Wool Receipts in the U. S. to Mill Consumption—Receipts not reduced to grease equivalent, adjusted for seasonal variation. Consumption as above, three-month moving average. Average for 1921-1928 = 100 for all four indexes. Ratio of Raw Wool Imports to Mill Consumption—Imports not reduced to grease equivalent, adjusted for seasonal variation. Consumption as above, Average 1921-1928 = 50, three-month moving average.

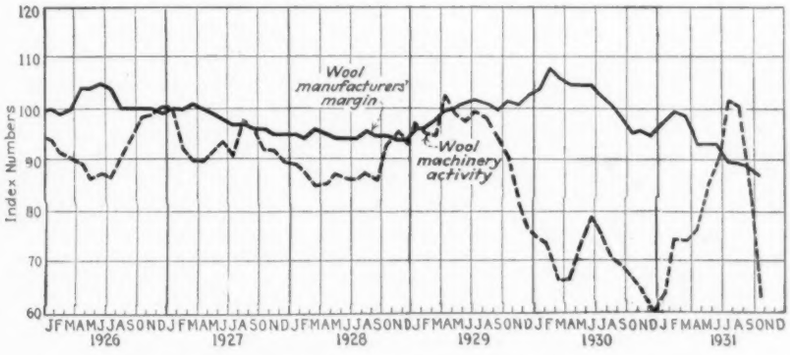
Index Numbers
Wool manufacturers' margin
Wool machinery activity
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Fig. 2. WOOL MANUFACTURERS' MARGINS AND ACTIVITY:

Wool Manufacturers' Margins—Average of replacement margins; Wool Machinery Activity—Composite of loom and spindle activity, adjusted for seasonal variation; Average 1923-1927 = 100 for both indexes.

Yarn Prices Nominal

The Textile World index of worsted sales yarn prices has remained unchanged for the month of November. The index was 62.6% of the average for 1921-28, against 75.9% a year ago.

Meanwhile raw wool prices have sagged and, as a result, the average spinner's replacement margin has advanced moderately for two consecutive months. Worsted spindle activity in October was at the lowest annual rate since January, 1921, while loom activity had not fallen off quite so fast. This suggests that yarn stocks have been reduced.

Raw wool and top prices have declined, however, and the demand for yarn is dull both for weaving and knitting. We feel that current yarn prices are largely nominal and that declines are more probable than advances.

Cloth Prices Lower

The October index of woolen and worsted goods prices of the Bureau of Labor Statistics was 71.5% of the average for 1921-28 during October. This compared with 72.5% in September and 82.5% a year ago. A further moderate decline probably occurred during November.

Our composite seasonally adjusted index of machinery activity during October fell to the lowest point since last December. Yet this sharp curtailment of wool textile production has not halted the decline in the manufacturers' replacement margin. Price cutting by cloth manufacturers is forced by unbalanced supply and demand conditions.

Consumer buying of fall goods and clothing was retarded by unseasonable weather and low purchasing power. The topcoating season was unusually poor, and the fall season buying is still backward. Hopes for any substantial amount of lightweight orders have been postponed until retailers can move their heavyweight goods. Credits and collections are worrying the manufacturer and failures are numerous. Clothing prices have been reduced and recessions in cloth prices are apparently not ended.

Market Briefs

Cotton: ***Heavy market following final crop estimate.***

Cotton Yarns: ***Dull and irregular market.***

Cotton Goods: ***More confidence but no business gains as yet.***

Wool: ***Prices steady though market is quiet.***

Worsted Yarns: ***Buyers withhold and prices are irregular.***

Woolen Goods: ***Cold weather stimulates demand for heavyweights.***

Silk: ***Prices softer, due to lull.***

Silk Yarns: ***Spun yarns improve; thrown silk quiet.***

Silk Goods: ***Price stressed in active print call.***

Rayon: ***Crepe weavers buy steadily.***

Knit Goods: ***Brief Christmas hosiery season ends; winter and summer underwear lines both slack. Bathing-suit sales for 1932 backward; sweaters easier.***

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JACK MECH.
U. S. PAT. NO. 1,371,535

SLACK PREVENTING DEVICE
U. S. PAT. NO. 1,701,169

CENTER STOP
U. S. PAT. NO. 1,528,358

NEEDLE BAR
U. S. PAT. NO. 1,420,857

SPRING BAR MECH.
U. S. PAT. NO. 1,730,023
U. S. PAT. NO. 1,761,381

TENSION BAR MECH.
U. S. PAT. NO. 1,763,280

SHOCK ABSORBER
U. S. PAT. NO. 1,750,017

TAKE-OFF MECH.
U. S. PAT. NO. 1,515,599

THREAD CARRIER STOP
U. S. PAT. NO. 1,402,033

REVERSING DRIVE MECH.
U. S. PAT. NO. 1,712,660

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TEXTILE MACHINE WORKS
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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Yarn Market Dull and Erratic

NO MATERIAL change has been noted in the cotton yarn market. The Government cotton crop report was considered by some factors to have a bullish aspect inasmuch as it was below 17,000,000 bales by 82,000, so that in this respect it had more of a chance to help the situation than if it had touched or exceeded that figure. December in previous years has usually been a dull month, but in most instances it has been preceded by several weeks of active buying.

Immediate needs form the basis for any trades noted this week, and these are of small size. Dealers say they have had buyers call them long distance collect to order two warps out of stock, to be shipped at once. Sales, therefore, are at a minimum, and as a result prices have little chance to find an esablished basis. With more than one spinner betraying a desire for business to keep his mill in operation, prices are showing scattered signs of weakness, but dealers still regard the market as on a nominal basis. Competition for limited business leads to more or less "chiseling" in prices which have little bearing upon general conditions or values. Any tendency to activity might easily result in stiffening of prices. Several yarn users have announced their decision to close their mills for a period of two weeks, from Dec. 19 to Jan. 4, unless business is forthcoming which will make it necessary for them to keep their plants in operation. This further curtails their current yarn needs. Tapestry and upholstery mills continue quiet with little business on their books. Men's wear and dress goods mills show little activity, while plush mills likewise are dull. There seems little real chance for any volume buying of yarns, even where prices might be considered right. With prices on a nominal basis, 20s-2 warps are noted on an average 16 to 16½c., with 30s-2 warps at 20 to 20½c. and 8s-3 tinged at 12c.

In carded knitting yarns dealers have had several requests to hold up deliveries of coarse counts where unseasonable fall weather slowed up business, and manufacturers are anxious to avoid too large an inventory. An average basis of quotations is 13½ to 14c. for 10s frame spun, although occasionally lower figures are heard; 18s are noted at 15½ to 16c., with 30s average quality at 21c.

The combed yarn situation is unchanged with little real demand in the face of serious efforts to effect sales. This has resulted in a weak price situation in that it is possible to buy yarns at prices under prevailing quotations where there is a chance to dicker. Dealers maintain that combed yarn prices are also on a nominal basis in the absence of any general selling, with the figures on page 68 representing average quotations. Fine yarns continue to show more irregularity than the coarser counts as sellers have been canvassing the more limited outlets for these finer qualities. Mercerized yarns fail to show any new development with a quiet market and some price irregularity on the part of certain factors, although larger operators are endeavoring to stabilize conditions by holding more closely to the quotations noted on our regular list for quality yarns.

◆Cotton Goes Lower Under Liquidation

THE news feature of the week so far as the cotton situation itself was concerned, was the Government crop report issued on Dec. 8. It had been expected that this report would show an increase and according to a canvass of Cotton Exchange members made a few days before its publication an estimate of around 17,200,000 bales was anticipated. The report showed an increase of 15,000 bales as compared with the previous months, but this brought the total up to only 16,918,000 bales or nearly 300,000 bales below the discounted figure. The effect on the market, however, was apparently exhausted by a little flurry of covering immediately after its appearance and a price movement of something like 10 to 15 points.

The market is more interested in the action of southern spot holders and in the outlook for general business conditions as it may be reflected in the general news or in the action of the stock market. The latter has been particularly discouraging from a bullish standpoint and January contracts, which at the beginning of this month seemed to be showing decided resistance to decline below the 6c. level, have worked a few points below that figure, or back within 35 points of the season's low record established early in October.

There has not been a great deal of hedge selling and perhaps there has been a tendency to exaggerate the selling by so-called cooperative brokers, which, of course, may be either for the cooperative interests or other clients. If the cooperatives have been selling, it is believed to have been accompanied by purchases of spot cotton in the South for the purpose of replacing long contracts with new crop spots. In any event, it is generally agreed that the chief buying has represented covering or trade buying on scale-down orders, while there has been considerable liquidation of long contracts, part of which were probably acquired on the advance toward the end of October when every

(Continued on page 63)

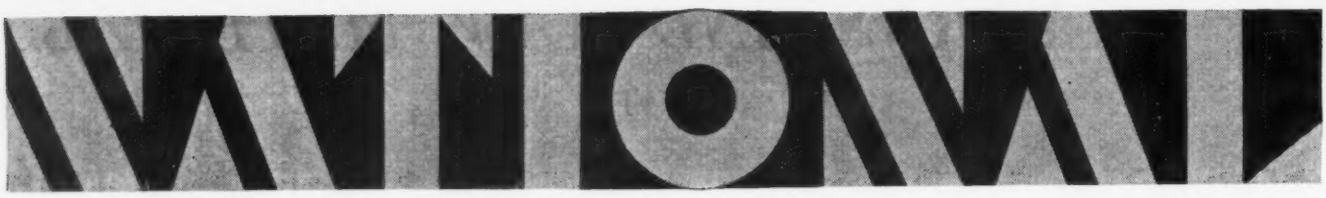
◆Worsted Yarns Find Wools Firmer

THERE have been no new developments added to the story of worsted yarns this week. There is the same general lack of real interest, and several users have asserted they do not expect to buy any more supplies until after the first of the year. This is due largely to the approach of inventory time. On the other hand, there has been little or no development in the movement of finished goods to make manufacturers require more yarns on hand.

While yarns have remained rather stationary as to prices, wools have been showing added firmness with reports of renewed active purchasing, especially in New England, by both manufacturers and dealers. This condition seems to indicate confidence in the raw material, despite the present dull condition of the yarn market. Prices paid for wools give reason for belief that buyers anticipate a higher price basis for worsted and woolen yarns, as they would hardly be investing in wools at prevailing prices otherwise. With wool prices showing increased firmness and advances in certain grades, yarn prices have not followed suit. As a result, yarns show a decidedly reduced spread between selling price and wool replacement cost. The bulk of the wool buying is reported to come from New England. Spinners in and around Philadelphia have not as yet shown any great activity.

The final advent of cold weather is regarded by most factors as certain to have a helpful influence upon sales of finished goods to the consumer in the way of clothing. This development is likely to cause a movement all along the line from yarns up to finished products. As far as men's wear conditions are concerned, there is as yet little change in the situation. Many factors regard the season already as almost too late to produce any volume of business in time for distributors' requirements. Reports of a keen interest in stocks of finished goods are noted where cutters-up are evidently trying to make up for lost time and prepare for business after the first of the year. It is thought likely that many manufacturers will show a reduced number of styles for the next season, and several mills are apparently abiding by their present lines without introducing any new styles. It is felt the delayed season will offer little opportunity for profit if manufacturers figure costs on larger than 75% operation. Dress goods mills also show little improvement, with scattered sampling along restricted lines. Yarn sales are small and usually to fill in or to be used in preparation of samples.

Knitters apparently are restricting operations because of limited sales.



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All of these fifty new shades for ladies' woolen dress goods may be economically produced with varying degrees of fastness as desired, by combinations of the following NATIONAL DYES:

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

Sampling for next season occupies the attention of some factors who are hoping to recoup this season's lack of business. Sales of yarns are confined to small lots either for filling-in, or for sampling purposes. As a consequence prices show little quotable change over previous levels.

◆Woolen Wools Attract Mill Buying

WOOL is holding its own and although there is considerable pressure exerted to push prices lower the average level is maintained. The mills of the country, it is believed, will consume enough wool to bring about the importation of certain qualities and grades before the new clip arrives, and as there is a substantial price difference between domestic and foreign wools, neither manufacturers nor merchants are anticipating lower prices on domestic wools. The market is encouraged by the movement of short wools for woolen manufacture. Values have sagged down to such low prices that business is being stimulated, bringing about purchases of fairly large weights of short clothing wools chiefly fall and spring Texas.

The trade believes that the nearer the market moves to the new clip, the better prices will become. Light stocks held by dealers and light stocks held presumably by the mills furnish the basis for this attitude. It is insisted that after years of decline wool is as good as gold, although it is realized that too much stress ought not to be placed on current prices as below prewar level on account of the entirely different conditions now prevailing.

Prices on territory wools are steady to slightly higher than a week ago. Short combing wool in original bags is firmer. Little or no original bag wool is obtainable below 50c. Prices are steady to strong on graded territory wools, both half-blood and quarter-blood qualities. Texas 12-months wool continues to attract mill buyers. Supplies are likely to be larger next spring owing to the unshorn fall lambs yielding a 12-months wool. Sales continue good, prices depending on quality.

Fleece combing wools of all grades hold firmly. Mills buying these wools are purchasing on lowest basis for years. The supply of combing fleeces, other than delaine, is said to be small. Fleece clothing wools are being purchased with greater confidence. Some substantial quantities of fine Ohio have been taken out of the market at 21 to 22c. in the grease of about 54 to 56c. clean basis. Fine clothing, dormant for a rather long period, is now becoming included in the buying movement covering short wools in general.

◆Cheap Wools Retard Substitutes

WERE it not for cheap wools, noils and wastes the woolen rag and reworked wool industry would be in a better position than it is. Woolen manufacture for the period May-September was well above 60% of capacity and although there was some let-up in October, production did not return to the low point of the year seen in January. The small business appearing in recovered wools is irregularly distributed and the "shoddy" plants nearest to points of consumption seem to be favored in the receipt of small orders on which quick delivery is demanded. The situation in the American rag and rework industry is in sharp contrast to the English industry which has been greatly stimulated by the exchange and tariff situation.

No developments of material importance are noticeable in wool wastes but the tone is a little more cheerful. Most dealers believe that the decline in wool waste prices is over for months to come.

Larger interest seen in short wools for woolen manufacture has brought encouragement to noil dealers who now feel that it is only a matter of a short time when fine noils will get their turn of business. In 1926 fine domestic noils were selling on the average throughout the year at 80% of Texas 8-months wool, while at the present time they are quoted around 63% of the Texas wool. A strong and healthy basis for noils is found in the very low level upon which they are now being offered.

◆See Good Rayon Call For Crepes Soon

ENCOURAGING reports as to January prospects for rayon yarn demand for rayon crepe production are reaching the yarn producers; these reports indicate a better feeling among weavers; the mills are already placing a fair quantity of yarn business which, while it is limited to just a small range of deniers, is spirited enough to have cleared the existing stocks of some producers on these particular lines. Underwear knitters seem to have decided upon a hold-off policy for the remainder of the year; little or no business is being placed and the producers do not look for any improvement prior to January.

Rayon stock position is healthy; producers have operated on a curtailed basis for some months. The carry-over will run between 30 and 60 days supply, it is believed, though a few firms may exceed this figure. Price tone is decidedly firmer than it was in the concluding month of 1930; manufacturers are still averse to future contracts but they talk confidently of buying in January. The current hesitancy is due largely to the desire of purchasing concerns to end the year with low inventories.

◆Wool Mills, Knitters Buying Spun Silk

SILK spinners are enjoying a fair call from wool goods manufacturers and knitted underwear mills which business, while it does not make up for the lack of interest among broadsilk firms, has brought encouragement to the yarn mills. Weavers are very hesitant and there is little prospect of any pick-up in demand at that end before the beginning of the year. Backward movement of spring fabrics is blamed for the delay; broadgoods mills are limiting their lines and are producing cautiously. Spun yarn prices are unchanged.

Throwsters receive occasional orders from hosiery mills for January-February delivery, but demand as a whole is well below normal. Prices have eased slightly, due to the sluggish movement. Broadsilk mills seem determined not to place any new business until after inventory, and orders are limited to small spot contracts.

◆Raw Silk Very Weak; 1932 Outlook Fair

WITH demand from manufacturers so low as to be almost negligible, raw silk position has hit all-time lows, and further decline is likely before the end of the year. Importers are still in a fairly hopeful mood, as December is usually light, and they look for a decided improvement in the first quarter of 1932. Orders from broadsilk mills showed a steady decrease during the last week, due to the approach of inventory time and to sluggishness in fabric sales.

Hosiery manufacturers are even less interested than the weavers in placing raw silk orders; Christmas turnover in hosiery has proved very disappointing and the industry approaches the year-end with considerably more stock than was expected. The knitters have little raw silk on hand, but as they are reducing output they will not be likely to need supplies until after the holidays. The Christmas shut-downs also serve to modify their primary market requirements.

Yokohama prices have varied somewhat, but mid-week found them back at last week's levels. Sentiment there is confident and prices are somewhat firmer than in New York.

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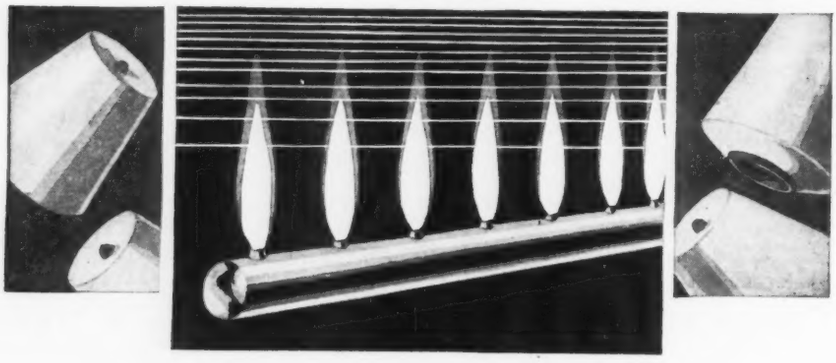

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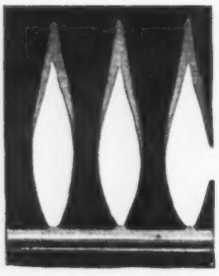

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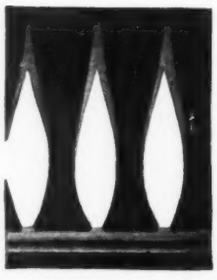

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FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Confidence Slowly Returns to Cottons

THE initiative shown by buyers of print cloths in their recent visit to the print cloth producing centers of the South on behalf of stabilization is already bearing fruit in evidences of greater confidence and firmness in the market. Some of the leading commission houses on Monday either withdrew their standard print cloth constructions from sale or made blanket advances of ⅛ to ½c. over the entire list, which at present is equivalent to withdrawal.

Better things are in store for this important division of the cotton goods market if the plans now being formulated in the minds of leaders are finally brought into being. It is understood that a committee of principal producers will survey the field and make recommendations as to the volume of production which the market may be reasonably expected to absorb. It is likely as a result that a program of curtailment will be entered into which will bring most mills back to only day-time work and prevent a recurrence of the chaos which developed in November when it became evident that print cloth production was getting out of hand. The program will be set up with a broad view over the next 12 months. Curtailment over the holiday period will aid in setting the market back to a better balance.

The actual market for print cloths was not much changed early in the week. Small amounts of 5.35-yard, 64x60s sold for 3⅜c., 68x72s made 3⅝c., and 80-squares went for 5c. Many houses, however, would not sell at these figures. Cotton was weak before the Bureau report on Tuesday but as the goods market and the raw material market have shown little relation to each other lately, not much attention was paid to it.

Sheetings sold in only a narrow way early in the week with 2.85-yard, 48-squares at 5⅛c. and 5.50-yard, 48x40s selling at 2¾c. and many holders asking 2⅞c. Osnaburgs were quiet. There was little interest in drills though 2.50s, 30-in., sold at 5½c.

There was renewed interest in fine and fancy gray goods as houses went forward with the preparation of their spring lines. List prices have been well held in staple numbers, but it is understood that concessions were to be had on special constructions. Good interest in rayon crepes still held, and there was a better movement of all-rayon taffetas.

New lines of bedspreads are in preparation for a January opening. There is some dissatisfaction with the merchandising of these lines on a seasonal basis and considerable wastage is alleged through the production of poor selling styles. This is a condition which persists in many quarters of the market and cannot well be avoided so long as there is competition among houses for the cream of the business. Although rayon is going to play a prominent part in the new lines, additional stress is being laid on all-cotton spreads which it is believed will prove popular. Prices on many of the new lines will show considerable reductions from a year ago.

Lines of spring dress goods are moving slowly and it will probably be after the first of the year before buyers really give these lines the attention they deserve. In several houses prints are being offered which are called "commercially fast," with the ultra-fast vat dyes offered at a slightly increased price. It cannot be said on which the cutter will concentrate, but for the best good of the industry and the reputation of cotton prints it is to be hoped that he takes vats for the greater part. Much breath has been spent in condemning depreciation of quality and if the consumer has an unsatisfactory experience with prints in one season it will be hard to reestablish them in her favor again.

◆Price Dominates in Broadsilk Sales

PRICE is a dominant element in pre-Christmas business in broadsilks. Mills find some difficulty in moving their better quality prints, but the low-level designs are in active call—provided price is right. The $3.75 dress houses placed considerable business this week on both the low-priced silk and the rayon prints, at prices from 62½c. up. There is plenty of stock available and mills are reducing to clear with the aim of improving cash position for the year-end.

This price weakness applies chiefly to the medium and small mills but a few even of the leading companies are involved. It is due to overproduction for the most part. The favorable situation of the mills which are holding down on output of prints indicates clearly enough the need for curtailment. Prospects for the low-price prints in January are not encouraging. With demand likely to wane for the holiday period, and altogether too much stock available, the mills will be disposed to slash prices drastically next month to effect turnover.

Plain fabrics are moving steadily at comparatively firm prices; these solid colors are behind prints in volume in the price class but volume is well above other years at this time. Mills leaning strongly to plains are apt to come out better during the next few months; though they may have lower total sales, their price tone will be firmer, since plains are less transient in style value than prints and there is less rush to clear.

◆Wool Goods Active, But Price is Stressed

A PERCEPTIBLE pick-up in demand for men's wear worsteds has followed the seasonable drop in temperature. Much of the current buying is of the fill-in type, and mills are being pressed for quick delivery. There is a trend toward fancies, especially blues, greys and browns, and soft decorations are preferred. Mill men are hopeful that fancies will show steady improvement, allowing of course for the normal holiday slackening.

Worsted prices have steadied somewhat, thanks to stock movement. Sellers complain of downward pressure in price by customers, but are offering some resistance. Price tone is still far from what it should be, at what is practically the opening of the season. Stocks are abundant and some mills are ready to sacrifice, in order to liquidate for inventory purposes.

The cold weather has proved a tonic to all wool goods divisions but real benefit will accrue only if the temperature stays down for a couple of weeks. Overcoatings have improved somewhat; there is a strong spot call, with business limited to small fill-in orders.

Mills are producing worsteds more spiritedly than sales warrant, this being particularly true in the low-price ranges. Unless there is a sharp upcurve in buying or a decisive reduction in output, the end of January may find the worsted market with stocks exceeding demand.

Women's wear fabrics move hesitantly; a few of the novelties shown at recent openings have enjoyed fair demand but the market is now in a lull. Women's wear cutters defer all except spot buying until after the holidays.

▸Philadelphia Manufacturers Protest Higher Taxes

Strong protest against proposed increased taxes is voiced by the Philadelphia Textile Manufacturers Association, who warn city officials that higher taxes will force manufacturers to locate elsewhere causing increased unemployment in that city. Difficulty is experienced by many manufacturers in paying present taxes, so that any increase would have disastrous effects. In a statement issued by Julius R. Bux, president of the association, the results of unfavorable legislation are pointed out in the experience of various New England cities, such as Fall River, New Bedford, Lowell, Lawrence, etc., with the recommendation that Philadelphia officials would do well to study the situation in such localities before adopting such tax increases as have been proposed for 1932.

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And then there is the obvious advantage of *naming* your fabric. The consumer will learn that name . . . use it when she comes back for more . . . when she buys made-up merchandise . . . when she "bridges" or "teas" with friends.

In the last few years Kaumagraph has helped many a manufacturer. In some cases we have actually created and designed the trademark. Often Kaumagraph has had the trademark registered. Always Kaumagraph has shown the manufacturer the ideal way to apply his trademark—with Kaumagraph Dry Transfers.

Kaumagraph Dry Transfers constitute the perfect method of applying trademarks to textiles with beauty, economy and absolute clarity. To facilitate the application of Kaumagraph Transfers we have designed special machinery that reduces marking costs to a negligible item. We will be glad to mail you additional information . . . or, if you prefer, we'll send a special representative to tell you more.

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KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Caution Urged in 1932 Lace Hosiery

HOSIERY manufacturers regard Christmas business as over and they are turning their attention to spring plans. The industry is strongly confident of the 1932 prospects for mesh full-fashioned and other novelty lines for women, and it seems that every mill with the necessary equipment is going to include lace effects in its spring lines. The tendency this way is so pronounced that there is danger of over-production in mid-season, unless output is kept in close alignment with sales. This problem of possible surplus is more serious in novelty full-fashioned than it could ever be in staples, as any unexpected change in fashions would find the market flooded with fancies that could not be cleared except at a loss. Indications point to a healthy call for mesh and lace-tops during the early part of the year, but a policy of caution is essential.

Women's staples fared badly this Christmas; total business has been well below normal for the season, and some sales managers in Worth Street said they "scarcely knew it was Christmas." Prices hold steady and the market does not look for any early softening, but buying has been meager and uneven throughout the brief holiday period. Christmas half-hose sales were fairly satisfactory as regards volume; prices, however, were weak and there was little profit in the business. The half-hose call is divided between staples and fancies; in the latter clocks are much favored. The general talk of a boom in men's staples is taken skeptically by some well-informed factors who say that buying trends would not justify a mill in strongly increasing its output. The Christmas call for these lines, normally big, has been just fair this year.

◆Swimsuit Industry Faces Late Season

IT GROWS more evident each day that the bathing-suit season will be late in developing and cautious production policy on the part of mills is important. The merchandise is too definitely "sold" to doubt that a satisfactory season will come eventually, but 1932 is a big question-mark, and current prices allow so little margin that mills cannot afford to take a chance on a possible break in mid-season. Swimsuit buying since the fall openings has been decidedly below recent years; it is not a question of buyers doubting the eventual demand; they talk confidently regarding these prospects but are so determined on low year-end stocks that they defer orders until January.

A fair amount of business on both men's and women's suits has been placed; dark colors lead, with pastels a good second. Manufacturers say the importance of white for women's suits has been exaggerated and there is now a tendency to hold down such stocks.

Heavyweight sweater call is lighter, though some mills still report a fair reorder demand. Stocks are very moderate and there should be only a medium carry-over Dec. 31. Most distributors have all the Christmas merchandise they want and are waiting until after the holidays to cover for later needs. It is unlikely that there will be any sizeable orders in winter sweaters before January. Lightweights move sporadically, depending upon weather; the recent mild temperatures in the Atlantic States brought a more-than-seasonal call but demand has been lighter this week.

◆Ribbed Underwear Demand Slackens

RIBBED underwear demand has slackened, due mainly to the desire of distributors to end the year with minimum inventories. Stocks in hands of retailers are so low, however, that any pronounced turn to cold weather could conceivably bring a flood of reorders. Stocks in mills are moderate, thanks to conservative policy of production, and indications point to a moderate carryover. The outlook for the next four weeks in uncertain. Some manufacturers believe the season for heavyweights is practically over, while others look for a sporadic reorder demand well into January. It is generally accepted that mills will put off their new openings at least until the end of January.

Lightweight underwear demand also is easier and the market does not expect any significant pick-up before the end of the year. Cooler weather during the last week helped stores to clear heavyweights, making buyers more inclined to place spring business, but they are far from enthusiastic on the idea of buying ahead. A good call for lightweights is expected to develop in January. There have been plenty of buyers in the New York market of late, but they confine themselves to "shopping" the spring lines; even sample orders are light, and mills are holding down on production, pending more definite indications of how spring will develop.

Rayon underwear is reported to be gradually firming, the buyers leaning away from the hesitancy which followed the recent price advance. The old-price rayon merchandise has moved fast and there is little now available.

◆Raw Cotton Reports

(Continued from page 57)

one was more or less enthused over the prospect of inflation of commodity values and a general upturn in business. Recent developments have modified bullish opinions, and while confidence in values is still quite generally in evidence it has more to do with ultimate than the immediate course of prices.

The Government report gave revised figures on the acreage planted and harvested. The revised figures placed the area under cultivation as of July 1 at 40,954,000 acres compared with the original estimate of 41,491,000 and placed the acreage harvested at 40,495,000 acres while the estimate of Nov. 1 had been based upon an expected acreage for harvest of 40,889,000. The yield of cotton per acre was increased to 200.1 lb. in the estimate as of Dec. 1 compared with 197.8 lb., the forecast of the previous month. Ginnings reported prior to Dec. 1 amounted to 15,023,451 running bales which was considered about in line with the figures on the indicated crop. This prospective supply of 16,918,000 bales of 500 pounds gross weight, suggests a crop in running bales of about 16,500,000 bales, which would be brought up to about 16,750,000 bales by the addition of repacks, etc. The prospect is for an addition of about 3,750,000 bales to the world's carry-over of American lint cotton at the end of this season.

Such figures may be discounted in the market's immediate technical position, but they can hardly be ignored, although it is believed that the Farm Board and southern bankers are preparing to carry about 7,000,000 bales of cotton, including part of the old crop carry-over, into next season.

◆Peeler Comber Strong; Strips Easier

THE strong position of peeler comber continues to be the bright spot in an otherwise drab cotton waste situation. Demand for this material from dealers and spinners is holding up exceedingly well, and this, combined with the relative meagerness of available supplies, has resulted in very strong prices. Dealers have paid 5½ to 5¾c. to cover their requirements, while users generally have paid 6c. This week, 6¼c. was paid for a choice lot of No. 1 comber.

The situation in strips is not so satisfactory. Prices have eased off somewhat and it is now possible to buy a good grade of peeler strip at 5¼c. and a good upland strip at 4½c. Willowed picker and fly are dull, one or two lots of the former bringing 2½c. this week.

20 Textile Men *tell you why they use* Water Treatment

WISCONSIN
"We are able to save about 75% on soap bills . . . it has increased the marketability of our product."

OHIO
"We have saved about $3000 worth of soap a year."

NORTH CAROLINA
"We get a better bleach with both chlorine and peroxide, also a great improvement in our general finishing and dyeing."

GEORGIA
"We could not operate without a water softener."

TENNESSEE
"The principal advantage we find from treated water is in the handle and feel of the goods, and it enables us to get them clean much easier."

WEST VIRGINIA
"Effected for us a saving of 50% to 70% in soap and other chemicals."

MICHIGAN
"Permutit Equipment handles the situation with a large saving in soap and alkali."

CALIFORNIA
"It would be impossible to dye with Los Angeles water without a softener."

NEW ZEALAND
"We showed a saving of 33% in milling and piece scouring and 50% in wool scouring."

OHIO
"If soap were ever precipitated on the (felt) fiber with hard water, nothing that could be done would remove it. . . . Were we to build another mill tomorrow we would use Permutized water, unless the water was zero soft."

NEW JERSEY
"The saving in mill supplies has been considerable."

CONNECTICUT
"Results have more than justified the cost of installation."

PENNSYLVANIA
"We have saved from 40% to 50% in our soap bills."

MISSOURI
"We are operating our bleacher not only more economically but also with higher efficiency."

NEW YORK
"We feel that the Permutit System has paid for itself in 12 months."

INDIANA
"Our records show a good saving in soap and other materials."

ONTARIO
"We use only half the amount of soap that we used previously."

MINNESOTA
"We have saved 50% to 60% on our soda bills and 35% to 40% on our soap bills."

TENNESSEE
"Has improved considerably the quality of our bleach."

NORTH CAROLINA
"We have cut our soap supply more than half."

• • •

These are a few representative comments from hundreds of Permutit-equipped mills. Study the matter of water treatment for your own mill. Write for booklet, "Reducing Textile Costs and Troubles." No obligation, of course.

THE PERMUTIT COMPANY
440 FOURTH AVENUE, NEW YORK, N. Y.

Manufacturers of Industrial and Household Zeolite Water Softeners, Hot and Cold Lime Soda, Lime-Barium Water Softeners—Sand Filters — Iron, Oil and Manganese Removing Filters—Continuous Boiler Blowoff Equipment—Ranarex CO_2 Indicators and Recorders — Other Power Plant and Water Treating Specialties.

Permutit *Water Treating Equipment*

TWENTY-THREE SALES OFFICES THROUGHOUT THE UNITED STATES

TEXTILE FINANCIAL NEWS

TEXTILE WORLD ANALYST

◆ Lancaster Merges Fort Mill and Eureka

MERGER of the Fort Mill (S. C.) Mfg. Co. and the Eureka Cotton Mills, Chester, S. C., with the Lancaster (S. C.) Cotton Mills, largest unit in the Springs group of mills, was approved by stockholders of the last named company in a special meeting held in Lancaster, Dec. 2. The plan of consolidation involves an increase in the capital stock of the Lancaster Cotton Mills from $2,500,000 to $4,500,000 in order to permit the acquisition of the entire capital stock of Fort Mill Mfg. Co. and the Eureka Cotton Mills. Approval of the merger plan by stockholders of the Eureka Cotton Mills, for which a meeting is scheduled for Dec. 28, and similar action by the stockholders of the Fort Mill Mfg. Co., according to those in touch with the situation, will be only a formality as ownership in all the corporations involved in the merger is practically identical. It is understood that ultimate plans are to offer a quantity of stock to the public and have it listed on one of the New York exchanges. The merger will bring together several plants with combined equipment of 232,500 spindles and 5,348 looms, engaged in the production of print cloths, broadcloths, wide and narrow sheetings, and ginghams.

Hodges to Buy Indian Orchard

Indian Orchard (Mass.) Co. directors this week approved a plan to sell their plant to the Hodges Carpet Co. Stockholders will shortly be called together to act on the plan. Hodges has leased space from Indian Orchard Co. for some time.

May Hosiery's Good Showing

May Hosiery Mills, Inc., Burlington, N. C., reports for the year ended Aug. 31, 1931, a net profit of $212,364 after depreciation, interest and taxes, which compares with net profit of $260,178 after similar charges in the previous year. Sales for the 1931 year totaled $4,981,135, as compared with $5,893,703 in 1930, a decrease of $912,568. Current assets on Aug. 31, 1931 amounted to $1,140,412 and current liabilities, $133,809, leaving working capital of $1,006,603 which is a gain of $267,700 over working capital at the end of the 1930 fiscal year. The 1931 earnings are equivalent to 53c. per share on outstanding class A stock compared with $1.12 the previous year.

West Point Surplus Declines

Although the West Point (Ga.) Mfg. Co. showed an operating profit of about $300,000 for the fiscal year ended Oct. 31, 1931, after allowing $600,000 for inventory write-off, $1,153,506 for depreciation, and $360,000 for dividends, there was a net decrease in surplus account of $1,994,748. In the previous year the net loss carried to surplus totaled $1,085,357. The volume of sales in the 1931 fiscal year was about 10% below that of the previous year, while dollar sales were approximately 25% lower. Net quick assets on Oct. 31, 1931 amounted to $3,258,888, or $1,429,270 less than at the close of the 1930 fiscal period.

U. S. Worsted Dividend

The Superior Court at Boston, Mass., has authorized B. Loring Young, receiver of the United States Worsted Corp. to pay a dividend of 30% in the amount of $104,670 to the Old Colony Trust Co. of Boston, sole creditor on its claim for $3,488,997 on debentures. This brings total payments on the claim to 13%, two dividends totaling 10% having been paid previously. Receiver had a balance of $172,772 as of Nov. 1.

Powdrell & Alexander Sales Up

Powdrell & Alexander, Inc., reports for the 11 months ended Nov. 30, 1931, net sales of $5,547,645 compared with $5,499,252 in the same period of 1930, a gain of $48,393.

Plymouth Cordage Profit Small

For the fiscal year ended Sept. 30, 1931, Plymouth Cordage Co., Plymouth, Mass., reports net profit after depreciation, inventory markdown, etc., of $24,857, which compares with net profit after similar charges in 1930 of $287,508, and $920,823 in 1929. Current assets on Sept. 30, 1931, totaled $8,417,574, and current liabilities $469,774, leaving working capital of $7,947,800, which compares with working capital of $8,588,904 at the close of the 1930 fiscal year.

Boston Stock Auction

The following sales of textile shares were made at auction, Dec. 2:

Shrs.	Mill	Par	Price	Change
100	West Boylston, com.	100	5 lot	...
7	Border City	100	3	...
5	Richard Borden	100	1	...
90	Dwight	25	4	+¼
451	Lancaster, pfd.	100	1-1½	—½
10	N. E. So.	...	5 lot	...
25	Ipswich, pfd.	100	50c	...
131	West Point	100	37½	...
12	Naumkeag	100	50	...
50	Samoset	100	1	...
881	Total			

Tax Abatement

The Massachusetts Supreme Court has ordered the city of Easthampton to rebate the West Boylston Mfg. Co. $31,962 on 1930 taxes, with interest at 6% from Oct. 17, 1930. The city assessor, who appealed the recent decision of the board of tax appeals to the Supreme Court, contended that the mill had 120,444 spindles whereas the mill held that only 105,248 spindles were in actual operation, the balance being for replacement purposes.

Boott Mills, Lowell, Mass., have declared a quarterly dividend of $1 per share, thereby reducing the rate from $8 to $4 annually. Earlier this year the stock was on a $12 annual basis.

▸ Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Dec. 8.

	High	Low	Last Sale	Net Ch'ge
Adams Millis	27½	25¾	27½	+1¾
American Woolen	4¼	4	4	— ¼
American Woolen, pfd	24	21¾	21¾	— 1¾
Belding-Heminway	5¼	3	3½	+ ¼
Botany Mills, A	¼	¼	¼	— ¼
Cannon Mills	19	18½	18½	— ½
Century Ribbon	6	5½	5½	...
Collins & Aikman	8¼	8	8¼	— ¼
Consolidated Textile	¾	¾	¾	...
Duplan Silk	10	10	10	...
Gotham Hosiery	9¼	8¼	9	...
Industrial Rayon	28	26¼	26¼	—2¼
Kayser, Julius	8¾	8	8	— ¾
Kendall, pfd.	33½	31	31	—1
Mallinson	1¼	1	1	— ¼
Mohawk Carpet	9	8½	8½	...
Munsingwear	14¾	14¼	14¼	+ ¼
Pacific Mills	9¼	9	9	—1½
*Pepperell	35	35	35	—2
Phoenix Hosiery	6	6	6	—1
*Propper-McCallum	1¾	1¾	1¾	+ ¼
Real Silk Hosiery	3	2¾	2¾	— ¼
*Tubize	2¾	2¾	2¾	— ¼
United Piece Dye Works	13	12	13	+2¼
Van Raalte	7	7	7	...

*Listed on Curb.

▸ New England Textile Stocks

	Sale	Bid	Asked
Am. Mfg. Co., pfd.	50	48	..
Amoskeag	4	..	..
Arlington	23	18	21
Associated Textile	10	..	10
Bates	60	41	..
Berkshire Associates, com	12¾	1¾	..
Berkshire Associates, pfd.	40¾	11	15
Bigelow-Sanford, com.	19½	..	..
Boott Mills	120½	40	60
Edwards	80¾	42	46
Esmond, pfd.	98	95	99
Farr Alpaca	27	15	20
Hamilton Woolen	55	50	55
Hill	7	4	6
Indian Orchard	10	..	10
Ludlow	65	63	66
Merrimack, com.	35	5	10
Nashua, com.	7¼	3	6
Nashua, pfd.	29	20	25
Naumkeag	50	48	51
Newmarket	16½	7	11
Otis	45	40	43
Pacific	9¼	..	..
Pepperell	42½	35	38
Plymouth Cordage	56	53	57
York	8¼	6	..

▸ Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co.	...	228
Barnard Mfg. Co.	5	..
Berkshire (com.)	2	..
Berkshire (pfd.)	10	..
Bourne Mills	12½	15
Border City Mfg. Co.	3½	5
Charlton Mills	..	45
Davol Mills	1	4
General Cotton	1	3
Luther Mfg. Co.	..	65
Merchants Mill	..	15
Narragansett Mills	..	3
Pepperell Mfg.	35	39
Pilgrim Mills	..	30
Richard Borden Mfg. Co.	1	..
Sagamore Mfg. Co.	..	42
Shove Mills	..	..
Stafford Mills	..	1
Stevens Mfg. Co. (pfd)	..	24

▸ Textile Research to Be Reviewed

For the first time in the history of the textile industry a review of textile research, similar to annuals that have been published for sometime for the chemical and other industries that are leaders in scientific research, is to be published by the United States Institute for Textile Research, Inc., covering results for the year 1931. This initial issue will be dedicated to the memory of its late president, Dr. Samuel W. Stratton, and will bear the imprint of the Publications Department of the Massachusetts Institute of Technology.

The board of editors consists of Prof. E. R. Schwarz, Mass. Institute of Technology, chairman; Dr. W. E. Emley, Bureau of Standards; E. D. Walen, Pacific Mills, and Prof. L. A. Olney, Lowell Textile Institute. Each chapter will be contributed by a recognized authority on the subject covered. The volume will be ready for distribution early next spring.

Publication of the Annual was authorized by the executive committee of U. S. Institute at its meeting at the University Club, Boston, Mass., Dec. 4, and initial plans were discussed by the research committee at its meeting at Lowell Textile Institute Dec. 7. The next meeting of the latter committee will be held at the Chemists' Club, New York City, Thursday, Jan. 21, and the next meeting of the executive committee and the board of directors will be held at the same place the following day.

▸ Outerwear Distribution Study is Planned

A committee to study distribution problems in the knitted outerwear field has been appointed by Daniel Rheinauer, president of the National Knitted Outerwear Association, it was announced in New York this week, by Harold R. Lhowe, managing director.

The committee consists of John Sichel, Philadelphia, chairman, and the following: Bernard Steuer, of the Tarton Knitwear Co.; N. J. Bergman, Bergman Knitting Mills; H. M. Levy, Elbro Knitting Mills; David Karger, Eagle Knitting Mills; H. G. Goulder, Federal Knitting Mills; A. J. Farber, of Friedman-Blau-Farber Co.; L. A. Castle, Jantzen Knitting Mills, and S. Feuerstein, Malden Knitting Mills.

▸ Blum Stresses Courage as Broadsilk Need

If the silk industry is to take advantage of the fact that better values for less money are being offered today than ever before, it must be more stable and firm in its stand regarding such factors as production and price, Albert Blum, treasurer of the United Piece Dye Works told members of the Broad Silk Division of the Silk Association of America, Inc., recently at a luncheon meeting at the National Republican Club, New York.

Broad silk manufacturers need most of all, courage, Mr. Blum said. Courage is needed in changing plans of operation when necessary, courage in making adjustments to existing conditions; courage in keeping an announced position and courage to operate their business on what they know will be a profitable basis, rather than what they think has to be done because of competition reported in the trade.

Better planning of production, stocks and distribution are vital needs of the industry today, Mr. Blum said. Broader information concerning the business both of the individual and the industry as a whole is especially essential in view of existing conditions and prospects for the immediate future. Consumption will undoubtedly be less in the next six months than during the same period last year, due primarily to the depression and decreased buying power.

▸ 1931 Seen as Favorable Year For Rayon

The year 1931 has been a more satisfactory one for the rayon industry as a whole because of the fact that open and honest dealings with customers have resulted in producers and manufacturers bringing about more stabilized conditions, especially as regards prices. Real progress has been experienced in this branch of the textile business in direct contrast to the backsliding witnessed in most other industries. This is the opinion expressed in the current issue of the *Textile Organon* published monthly by the Tubize-Chatillon Corp.

Reviewing events of the year in the viscose and related yarns divisions, the publication states: "The January 9th price cut, together with the 90 day price guarantee, the reinstatement of quantity rebates based on actual annual purchases, and the setting up of the classification of 'obsolete' yarn, gave the industry the first solid footing it had enjoyed in over a year."

▸ Planning Second Annual Worsted Yarn Survey

The Industrial Research Department of the University of Pennsylvania is now mailing schedules to all owners of worsted spinning spindles in its second annual survey of worsted yarn production. The schedules call for total pounds of worsted yarn produced in 1931 subdivided into sales yarn and yarn for mill's own consumption, and classified as to whether for the weaving, knitting, or carpet trade. This survey continues the annual analysis of production trends in worsted yarn initiated by the Industrial Research Department last spring. This year information on average counts is being requested in order that annual production figures may be reduced to a uniform count and made comparable.

The survey is a part of the Department's program for keeping the trade informed as to broad trends of the market, and for providing individual firms with industry-wide facts against which they can measure their own progress.

▸ Says Mills Are Observing Night Work Policy

Cotton mills which subscribed to the policy of elimination of night employment of women and minors are consistently observing that policy, according to the following statement made last Saturday by George A. Sloan, president of the Cotton-Textile Institute:

"There seem to be many confused statements going the rounds on the question of night work in cotton mills.

"Twenty-six million spindles, representing approximately 84% of the cotton mills in the United States, have consistently refrained since March 1 from employing women and minors at night. It is true that some of these mills have recently started night operations but in all such cases this involves only the labor of adult males.

"Any statements tending to shake confidence in the voluntary efforts to shorten the work week and to discontinue the night employment of women and minors are especially harmful at this time. The economic and social welfare of the cotton textile industry demands the increasing observance of these policies.

"Highly constructive forces are now at work in the South looking to better cooperation and sounder merchandising throughout the industry."

▸ Johnston Mills Co. Offers Line of Colored Single Yarns

Johnston Mills Co., Charlotte, N. C., announces production of single colored knitting yarns, including heathers, mock twists, raw stock dyed, sulphur and direct. These yarns will be produced at the Anchor Mills, Huntersville, N. C., under the direction of O. L. Wagstaff, for 20 years superintendent of Amazon Mills, Thomasville, N. C. With the recent acquisition of the Watts Mill, Stony Point, N. C., which is reorganized as Worth Spinning Co., and operating on fine combed yarns, the Johnston organization now has a group of 11 controlled mills on combed, carded, colored and two mercerizing plants.

▸ Textiles Incorporated Sales Co. New Philadelphia Offices

The Philadelphia sales offices of Textiles Inc., Sales Co. will be removed from 308 Chestnut St., Mariner & Merchant's Bldg., Dec. 15, to larger quarters, 1055 Drexel Bldg., 5th and Chestnut Sts., Philadelphia. A. W. Latta is in charge of this office.

▸ Vestal Bill Reintroduced

The Vestal Design Copyright Bill, with some modifications on its application to non-textiles, was reintroduced in the House of Representatives this week, immediately at opening of new session of Congress, by Representative Vestal, of Indiana.

▸ Textile Wage News

The following paragraphs touch briefly on textile mill wage news current this week:

American Woolen Co. has made a 10% wage reduction effective at its plant in Norwich, Conn. Simultaneously, operations went on a 54-hour schedule, compared with 40 previously.

American Thread Co., Willimantic, Conn., and Holyoke, Mass., has arranged for 10% reduction in wages for employees at different mills, effective immediately. This follows a similar reduction in salaried officials on Nov. 1. The Kerr Mills at Fall River, Mass., took similar action.

Announcement has been made of a 10% wage reduction at the Cocheco Mills, East Rochester, N. H., when it reopens. The mills have been closed for a period.

With the wage reduction of 10% now effective in all the cotton mills of New Bedford, Mass., the Hathaway added 100 weavers to the payroll, these being operatives who had been laid off temporarily six weeks ago.

Assabet Mills, American Woolen Co., Maynard, Mass., which have been closed for six weeks following labor trouble, will be operated by the company and not by labor organizations when they reopen, say company executives. The company has laid down conditions under which it will operate which include no recognition of any organization, union or otherwise; past agreements and working arrangements are all nullified; the management is to decide what goods will be made, when and how; a cost control and time study system will be continued on a complete scale; wages will be scaled downward when conditions demand, but not on a flat rate; rehiring of help will be entirely in the control of the management and only those cooperating with the company and the employees will be employed. Representatives of the employees have voted to accept the conditions unanimously.

A 10% reduction in wages, effective Dec. 7, was announced at the Arcadia Mill, a William Whitman Co. unit in Lawrence, Mass.

▸ Wm. Iselin & Co., Incorporates Factoring Division

Incorporation of the factoring division of its business has been completed by William Iselin & Co., New York, the new incorporation being known as William Iselin & Co., Inc. Lincoln Cromwell, Arthur Iselin, George A. Vondermuhl, Kenneth P. Budd, Oliver Iselin and Jarvis Cromwell, are officers of the corporation, and will remain members of the partnership which will continue the various other phases of its business as heretofore.

▸ Glanzstoff Sales Changes

Several changes in the sales organization of American Glanzstoff Corp., were made known this week. W. R. Forsthoff, representing the company in Northern New Jersey, will also handle the yarn sales in the Northern New York district.

The company formerly was represented by John R. Kenworthy, of Amsterdam, who will represent Aberfoyle Mfg. Co. in that area, it is understood.

P. W. Brown has resigned his position with American Glanzstoff Corp., to become connected with Celanese Corp. of America in its yarn sales office in Philadelphia.

▸ Silk Travelers Meet, Elect Officers, and Dine

The annual business meeting, dinner and entertainment of the Silk Travelers Association was held Thursday evening at the New Yorker Hotel, New York City. Christopher S. Adams, who has been second vice-president of the association was the unanimous choice for president for the ensuing year; he succeeds Robert H. Hurlimann. The triple event drew a large attendance of the sales division of the silk industry, as well as numerous general executives and representatives of the production end.

Clifford C. Rounds, of the Associated Dyeing & Printing Co., was in charge of arrangements as chairman of the committee; he was assisted by Edward Cossenas, of the Oriental Silk Printing Co. The meeting was at 6 p.m., and the dinner at 7:30; a vaudeville program followed the dinner.

▸ Possible Revival of Hand Knitting in Home

Hand knitting of garments for the needy is suggested through the medium of the Philadelphia Federation of Women's Clubs and Allied Organizations. The results secured through such efforts during the World War are cited as an indication of what might be accomplished through such channels of home production with its consequently large consumption of wool, in turning out enormous quantities of garments for the unemployed who are in need of wearing apparel for the rigors of of winter.

The Washington office of the National Wool Marketing Corp. is authority for the fact that there is already an increase in home knitting. They find interest in use of mohair yarns which are relatively new for this use.

▸ Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Dec. 5, based upon data compiled by Dept. of Agriculture, follow:

	Week Ended Dec. 5	Total to Date 1931	Total to Date 1930
Domestic	709,000	250,382,000	243,455,000
Foreign	188,000	37,132,000	55,010,000
Total	897,000	287,514,000	298,465,000
IMPORTS AT PRINCIPAL PORTS			
Boston	188,000	37,132,000	55,010,000
Philadelphia	297,000	49,174,000	42,317,000
New York	1,071,000	49,180,000	42,842,000
Total	1,556,000	135,486,000	140,169,000

Business News

Now Shipping Hydrogen Peroxide in Tank Cars

The Buffalo Electro-Chemical Co., Inc., Buffalo, N. Y., has announced that it is now shipping its hydrogen peroxide in tank cars instead of in carboys. The company states that the tank car affords real economies which are naturally reflected in the price of the commodity. It points out that the new tank car has a capacity of 8,000 gallons and that for a similar shipment in carboys, nearly three carloads of containers would be required.

Truscon Takes Over Berger

The Truscon Steel Co., Youngstown, Ohio, has taken over the Berger Mfg. Co. Building Products Division at Canton, Ohio, and will continue to operate it as Berger Building Products Division of the Truscon Steel Co., continuing with Berger's present policies and retaining on their staff their present selling organization. The Berger Products Division manufactures a line of products similar to those of the Truscon Steel Co.

S. C. Stimson of Bahnson Adds North Carolina to His Territory

The Bahnson Co., Winston-Salem, N. C., manufacturer of humidifying equipment, has appointed S. C. Stimson as sales representative for North and South Carolina. Mr. Stimson has covered the South Carolina territory for several years, with headquarters in Spartanburg, S. C., but with an expansion of his territory, he will spend a portion of his time in the Winston-Salem office.

Lincoln Electric Moves New York Office to Mc-Graw Hill Building

The Lincoln Electric Co., Cleveland, Ohio, manufacturer of "Linc-Weld" motors and "Stable Arc" welders, has removed its New York office from 136 Liberty Street to the new McGraw-Hill Building at 330 West 42nd Street. G. N. Bull continues as district manager in New York.

Branch offices have also been established in Scranton and Allentown, Pa. D. Levenson is in charge of the former and F. Shackleton the latter territory.

New Copes Representatives

Northern Equipment Co., Erie, Pa., has appointed Irving M. Day, 306 Chandler Building, Washington, D. C., as representative for Copes feed water regulators, differential pressure control valves, pump governors, condensate drainage controls and allied equipment.

Northern Equipment Co., Erie, Pa., has appointed G. L. Simonds, Winter Haven, Fla., as representative in the State of Florida for the same products.

Large Flexible Coupling Order Goes to Ajax

Ajax Flexible Coupling Co., Westfield, N. Y., recently received an order for over 800 flexible couplings, all to be used on conveyor drives to be installed in the new Chicago Post Office. This is believed by the company to be probably the largest order ever placed for flexible couplings for a single conveyor system.

QUOTATIONS

at close of business, Dec. 9, 1931
Prices cover average qualities unless otherwise stated

Cotton Goods

	Dec. 9	Dec. 2	Dec. 10 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60	2 3/16–2¼c.	2¼c.	4–4¼c.
38½-in., 64x60, 5.35	3¼c.	3¼c.	5½c.
39 -in., 68x72, 4.75	3¼c.	3¼c.	6¼c.
39 -in., 72x76, 4.25	4¼–4½c.	4¼c.	6¾c.
39 -in., 80x80, 4.00	5c.	5 c.	7½–7¾c.
BROWN SHEETING			
36-in., 56x60, 4.00	4¼c.	4¼–4¾c.	6¼c.
36-in., 48x48, 3.00	4¼c.	4¼c.	7 c.
37-in., 48x48, 4.00	3¾–4c.	3¾–4c.	5¼c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	4¼c.	4¼c.	6¼c.
36 -in., 64x60, 5.75	3¾c.	3¾c.	5¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd..	4¼c.	4¼c.	7¾c.
Denims, 2.20.....	9½c.	9½c.	12½c.
Tickings, 8 oz.....	13 c.	13 c.	16 c.
Standard prints....	7 c.	7 c.	7¼c.
Eastern staple ginghams, 27-in.....	7¼c.	7¼c.	8 c.

Cotton Waste

Peeler comber	5¾ – 6¼
Peeler strips	5¼ – 5½
Sak. comber	4¾ – 5¼
Choice willowed fly	2¾ – 3¼
Choice willowed picker	2 – 3
Sak strips	6½ – 7
Linters (mill run	1¾ – 2¼
White spooler (single)	4¾ – 4¾

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.—4c., higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.13	22s	$0.16
10s	– .13½	24s	– .17
12s	– .14	26s	– .18
16s	– .14½	30s	– .20
20s	– .15½	40s ex. qual.	– .29

TWO-PLY SKEINS AND TUBES

8s-2	$0.13½	26s-2	$0.19
10s-2	– .14	30s-2	– .20
12s-2	– .14½	36s-2	– .26
14s-2	– .15	40s-2	– .28
16s-2	– .15½	40s-hi.brk.	– .30
20s-2	– .16	50s-2	– .35
24s-2	– .18	60s-2	– .38

SINGLE WARPS

10s	$0.13½	24s	$0.17
12s	– .14	26s	– .18
14s	– .14	30s	– .19½
16s	– .14½	40s. ex.qual.	– .29½
20s	– .15½		

TWO-PLY WARPS

8s-2	$0.14	24s-2	$0.18
10s-2	– .14½	26s-2	– .19
12s-2	– .15	30s-2	.20 – .20½
14s-2	– .15½	40s-2 ordin.	– .28
16s-2	– .15½	50s-2	– .35
20s-2	.16 – .16½	60s-2	– .38

8s-2 and 4-ply skeins and tubes; tinged, 12; white, 13½; waste, 12

HOSIERY CONES (Frame Spun)

8s	$0.13½	22s	$0.17
10s	$0.13½ – .14	24s	– .18
12s	.14 – .14½	26s	– .19
14s	.14½ – .15	30s tying	– .19
16s	.15 – .15½	30s reg	– .21
18s	.15½ – .16	30s ex. qual.	– .22
20s	.16 – .16½	40s	– .27

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.25 – .26	60s-2	$0.40 – .43
30s-2	.28 – .30	70s-2	.52 – .54
36s-2	.32 – .33	80s-2	.63 – .65
40s-2	.33 – .34	90s-2	.85 – .90
50s-2	.37 – .38	100s-2	1.03 –1.05

WARPS, SKEINS AND CONES
TWO-PLY—(Warp Twist)

20s-2	$0.26	60s-2	$0.42
30s-2	– .31	70s-2	– .55
36s-2	– .34	80s-2	– .63
40s-2	– .35	90s-2	– .95
50s-2	– .38	100s-2	–1.03

SINGLES

12s	$0.20	30s	$0.26½–0.28½
14s	– .20½	38s	– .31
16s	– .21	40s	– .32
18s	– .21½	50s	– .37
20s	– .22½	60s	.42 – .44
24s	.24½ – .25	70s	.55 – .56
28s	.26½ – .27½	80s	.65 – .66

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.36½–0.38½	90s-2	$0.90
30s-2	.38 – .40	100s-2	1.15 1.25
36s-2	.40 – .42	120s-2	1.50–1.60
40s-2	.42 – .44	30s	.51– .52
45s-2	.42½– .44½	40s	– .56
50s-2	.45 – .47	50s	.61– .64
60s-2	.50 – .54	60s	.70– .73
70s-2	.64 – .66	70s	.80– .83
80s-2	.73 – .75	80s	.92– .96

Cotton Prices and Statistics

COTTON STATISTICAL DATA

(Fluctuations of Futures)

	Closed Dec. 3	For the Week High	Low	Closed Dec. 9	Net Change
December	6.05	6.10	5.95	5.85	—.20
January	6.14	6.16	5.95	5.91	—.23
February	6.21	6.21	6.06	5.98	—.33
March	6.31	6.34	6.16	6.08	—.33
April	6.39	6.39	6.25	6.16	—.26
May	6.49	6.52	6.34	6.27	—.22
June	6.56	6.56	6.42	6.34	—.22
July	6.64	6.68	6.50	6.42	—.22
August	6.73	6.73	6.58	6.51	—.22
September	6.81	6.81	6.67	6.60	—.21
October	6.90	6.93	6.75	6.71	—.19

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Thursday, Dec. 3	6.20	6.05	5.05
Friday, Dec. 4	6.15	6.00	5.14
Saturday, Dec. 5	6.15	6.00	5.19
Monday, Dec. 7	6.10	6.06	5.28
Tuesday, Dec. 8	6.10	5.97	5.34
Wednesday, Dec. 9	6.00	5.92	5.30

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Dec. 8		Change
Jan. Sak	12.43	—1.06
Dec. uppers	9.22	—0.41
Dec.-Jan. Shipment c. i. f. Boston (Tariff not included)		
Fully good fair Sak		10.95
Fully good fair to good Uppers		8.60

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cent
Peruvian Tanguis Strict Middling	17½
Peruvian Pima No. 1	16
Peruvian Moderate Rough	13
Peruvian Full Rough	17
China Tientsin No. 1	10
India Rough	7 to 9½
India Smooth	6½ to 8½

(By Bruns-Nordeman Co.)

MOVEMENT INTO SIGHT

	This Year	Last Year	Year Before Last
Week	406,000	395,000	425,000
Season	8,652,000	9,218,000	9,648,000

WORLD VISIBLE SUPPLY

	Today	One Year Ago
Interior towns and ports of U.S.*	6,952,000	5,864,000
Afloat to and at ports of Europe	1,450,000	1,929,000
Afloat to and at ports of Orient	780,000	338,000
Total	9,182,000	8,131,000
	Increase	Increase
Change during week	91,000	143,000

*Includes afloat to New York.

FORWARDINGS TO MILLS OF WORLD

	This Year Week	This Year Season	Last Year Week	Last Year Season
No. States, U.S.	16,000	298,000	28,000	304,000
So. States, U.S.	104,000	1,944,000	101,000	1,745,000
Total U. S.	120,000	2,242,000	129,000	2,049,000
Great Britian	29,000	393,000	21,000	329,000
Continent	74,000	1,090,000	67,000	1,274,000
Orient	88,000	848,000	30,000	378,000
Canada and other America	4,000	64,000	5,000	94,000
Total foreign countries	195,000	2,395,000	123,000	2,075,000
World total	315,000	4,637,000	252,000	4,124,000

EXPORTS FROM UNITED STATES

Total	318,000	2,994,000	293,000	3,368,000

AVERAGE PRICE DEC.-JAN., SHIPMENT
HARD WESTERN COTTON
F.o.b. New England

	Middling	St. Middling
1 1/16-in	8 – 8½c.	8½ – 8¾c.
1 1/8-in	8¾ – 9¼c.	9¼ – 9¾c.
1 3/16-in	9¾ – 10¼c.	10¾ – 11c.
1¼-in	13½ – 14½c.	14½ – 15½c.

Basis on New York, March, 6.16.

SPOT FLUCTUATIONS AND STOCKS

Markets	Nov. 24	Dec. 9	Sales	This Week	Last Year
Galveston	6.25	5.90	4,403	906,464	701,402
New Orleans	6.25	5.92	16,810	798,016	762,651
Mobile	5.90	5.50	2,665	234,745	164,105
Savannah	6.10	5.69	2,752	322,006	294,773
Norfolk	6.31	5.94	439	69,791	97,656
New York	6.35	6.00	5,551	225,650	230,595
Augusta	6.13	5.81	925	136,464	141,864
Memphis	5.70	5.35	58,172	478,013	402,615
St. Louis	5.70	5.50	.....	.....	9,923
Houston	6.15	5.80	17,524	1,652,538	1,522,848
Dallas	5.75	5.40	44,214	54,211	44,139

DIFFERENCES ON AND OFF MIDDLING WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	0.65†	.75†	0.75†	0.75†	0.72†
S.G.M	.50†	.50†	.65†	.63†	.59†
G.M	.40†	.40†	.45†	.44†	.42†
S.M	.25†	.25†	.25†	.25†	.25†
S.L.M	.30*	.25*	.30*	.25*	.28*
L.M	.65*	.50*	.75*	.75*	.66*
S.G.O.**	1.00*	.75*	1.15*	1.13*	1.01*
G.O	1.35*	1.00*	1.50*	1.50*	1.37*
YELLOW TINGED					
G.M	0.30*	0.25*	0.30*	0.31*	0.30*
S.M	.45*	.40*	.50*	.50*	.48*
M.**	.65*	.50*	.75*	.75*	.71*
S.L.M	1.00*	.90*	1.15*	1.13*	1.08*
L.M	1.35*	1.40*	1.50*	1.50*	1.47*
YELLOW STAINED					
G.M	0.65*	0.60*	0.50*	0.50*	0.71*
S.M.**	.90*	1.10*	.75*	.75*	1.02*
M.**	1.35*	1.35*	1.15*	1.13*	1.48*
BLUE STAINED					
G.M.**	0.65*	0.35*	0.75*	0.75*	0.70*
S.M.**	1.00*	.85*	1.15*	1.13*	1.07*
M.**	1.35*	1.10*	1.50*	1.50*	1.45*

**Grades not deliverable on contract.
*Off Middling. † n Middling

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne.	$0.24 –$0.25	⅜ blood	$0.23 –0.24
Fine clthg.	.20 – .21	¼ blood	.21 – .21½
½ blood	.23 – .24		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.55 –0.58
California, Northern	.48 – .50

PULLED—EASTERN (CLEAN BASIS)

A.A	$0.58 –$0.60	B-Super	$0.43 –0.45
A-Super	.48 – .50	C-Super	.38 – .40

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.58 –0.60
Staple ½ bld.	.54 – .56
Fine and fine medium	.53 – .55
¾ blood	.48 – .50
¼ blood	.40 – .43

MOHAIR—DOMESTIC

Best carding	$0.23 –0.25
Best combing	.31 – .33

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 –0.21
Cape firsts	.18 – .21

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
7s	$0.45 –0.47
64s	.38 – .40
58s-60s	.33 – .35

(IN GREASE)

Montevideo:	
58s-60s	$0.16 –0.17
56s	.15 – .16
50s	.14 – .15
Buenos Aires:	
4s, 40-44s	$0.11 –0.12
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.19 –0.20
China: Combing No. 1	.12 – .13
China Filling Fleece	.11 – .12
Szechuen ass't	.12 – .13
Cordova	.09 – .10
Scotch black face (nominal)	.14 – .16
East India: Kandahar	.15 – .16
Vican'r	.19 – .20
Joria	.19 – .20

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.75
2-24s 40s	– .80
2-26s 44s	.82½– .85
2-28s 46s	– .87½
2-30s 48s	.92½– .95
2-32s 50s	.97½–1.00
2-30s 64s fancy mixes	1.35 –1.37½

(Single yarns 5c. less than above)

2-36s 58s	1.05
2-40s, 60s	–1.20
2-40s, 64s	1.27½–1.32½
2-50s, 66s	1.40 –1.45
2-60s, 70s	1.82½–1.85

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.70 – .72½
2-20s, 48s in oil	.72½– .75
2-20s, 50s in oil	.75 – .80
2-20s, 56s in oil	.92½– .95
2-20s, 60s in oil	–1.00
2-20s, 64s in oil	1.12½–1.15
1-18s, 48s dyed	.90 – .92½
1-18s, 50s dyed	.92½– .95

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	.97½–1.00
1-20s, 60s	1.02½–1.05
1-18s, 64s, dyed	1.25 –1.27½
1-26s, 64s	1.07½–1.10
1-30s, 60s, Warp	1.12½–1.15
1-30s, 64s, Warp	1.15 –1.17½
2-30s, 64s, Fancy mixes	1.35 –1.37½
2-40s, 64s, Zephyrs	1.27½–1.30
1-50s, 66s	1.42½–1.47½
2-50s, 66s	1.50 –1.55
1-60s, 70s	1.75 –1.80
2-60s, 70s	1.90 –1.95

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$0.95 –1.00
1-40s, 50-50-60s on cops	1.10 –1.15
1-40s, 50-50-64s on cops	1.12½–1.15
1-40s, 50-50-64s Australian cops	1.20 –1.25

Underwear mixes, 3 to 5c., Solid color, 35c. additional.

New York Top Futures

	Closed Dec. 2	For Week High	For Week Low	Closed Dec. 8	Net Change
December	67.50	68.50	67.50	67.50	.....
January	67.50	67.50	67.00	67.00	—0.50
February	67.50	68.50	66.50	66.50	—1.00
March	67.00	67.80	66.50	66.50	—0.50
April	67.00	67.50	66.50	66.50	—0.50
May	67.00	67.80	66.50	66.50	—0.50
June	67.00	67.50	66.00	66.00	—1.00
July	67.00	67.50	66.00	66.00	—1.00
August	67.00	67.50	66.00	66.00	—1.00
September	67.00	67.50	66.00	66.00	—1.00
October	67.00	67.50	66.00	66.00	—1.00
November	.....	67.50	66.00	66.00	.....

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.79 –0.81
Half-blood (60-62s)	.72 – .75
High ¾ blood (58s)	.67 – .69
Aver. ¾ blood (56s)	.61 – .64
Low ¾ blood	.58 – .60
High ½ blood (50s)	.53 – .55
46s S. A. and N. Z.	.61 – .63
44s S. A. and N. Z.	.56 – .58
40s S. A. and N. Z.	.50 – .52

TOPS — BRADFORD, ENG. (DEC. 4)

Fine (70s)	26½d	¾ bld. (56s)	18½d
Fine (64s)	24½d	½ bld. (50s)	14 d
½ bld. (60s)	23½d	Cross-bred (46s)	11 d

NOILS — BOSTON

Fine	$0.31 –$0.34	High ½ bld.	$0.26 –$0.27
Half-bld	.30 – .31	Low noils	.21 – .23
Aver. ¾ bld.	.26 – .28	Medium colored	.22 – .24
Fine colored	.30 – .31		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.55 – .58
Lap, fine colored	.40 – .43
Hard ends, fine white	.41 – .43
Hard ends, ¼ blood white	.30 – .32
Hard ends, fine colred	.18 – .20
Hard ends, medium colored	.13 – .15
Card, fine white	.21 – .23
Burr, fine carbonized	.23 – .25

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, coarse light	$0.05 –0.05½
Merinos, fine dark	.03½– .04
Merinos, fine light	.10 – .11
Serges, blue	.04½– .05
Serges, black	.04½– .05
Serges, red	.08 – .09
Knit, white	.19 – .20
Knit, red	.10 – .11
Knit, light hoods	.09½– .10½
Worsted, light	.04 – .05
Worsted, blue	.05 – .05½
Worsted, black	.05½– .06

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX sk 85%	$3.70
Japan organzine, 2 thd. grand sk. 83%	3.50
Japan organzine, 2 thd. sp. crack. sk. 81%	3.35
Japan crepe, 3 thd. gd. XX bob. 83%	3.50zz
Japan crepe, 3 thd. sp. crack. bob. 81%	3.40
Japan grenadine, 4 thd. sp. grand singles, 87%	4.60
Japan grenadine, 3 thd. 90%	5.50
Canton crepe, 3 and 4 thd. 14/16 on bobbins	2.65
Hosiery tram, 3 thd. Japan 90%	4.35
Hosiery tram 5 thd, Japan, 85%	3.40
Hosiery tram, crack XX 78%	3.10

SPUN SILK YARNS (Terms: net 30)

40/2	$3.10	60/2	$3.45
54/2	3.30	62/1	2.35

Raw Silk

(60 Day Terms. Spot Goods)

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 87%	$2.90	$2.40	$2.40
Special Grand, 85%	2.65	2.35	2.35
Grand XX, 83%	2.50	2.30	2.30
Special Crack, 81%	2.40	2.25	2.25
Crack XX, 78%	2.30	2.20	2.15
Extra Extra, 73%	2.25	....	....
Best Extra, 68%	2.20	....	....
Canton filature, new style, 14/16			$1.90
Canton filature, new style, 20/22			1.80
Tussah filature, 8 cocoon			1.10

NATIONAL RAW SILK EXCHANGE

	Close Dec. 2	For the Week High	For the Week Low	Close Dec. 8	Net Ch'ge
December	2.18	2.19	2.07	2.10	.....
January	2.20	2.20	2.10	2.11	.....
February	2.20	2.20	2.13	2.14	.....
March	2.20	2.21	2.13	2.14	.....
April	2.20	2.20	2.13	2.14	.....
May	2.20	2.20	2.13	2.14	.....
June	2.20	2.20	2.13	2.13	.....
July	2.20	2.20	2.13	2.14	.....

Total number of bales, 7,270. Total approximate value $2,272,235.50. Trading unit crack XX 13/15 white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
30	8	$2.25	...
50	12–18	1.35	$1.25
75	18–30	1.20	1.10
100	18–40	1.00	.90
125	36–50	.90	.80
150	30	.72	.70
150	24–44	.75	.72
150	60	.85	.82
150	75–90	.85	.82
170	24–27	.75	.72
170	60	.85	.82
200	30–42	.75	.72
300	42–62	.63	.60
450	42–72	.63	.60
600	72–96	.63	.60
900	100–144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	75	60	$1.30
25	24	2.85	80	60	1.30
30	24	2.60	100	75	1.10
40	30	1.70	120	90	1.00
52	30	1.50	150	112	.90
65	45	1.40	180	135	.87

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.60	125	$1.10
60	1.50	150	1.00
75	1.40	300	1.00
100	1.30		

Rayon Waste

Open bleached waste	$0.13–$0.14
Open bleached waste	.10½
Bleached thread waste (mfs.)	.09
Bleached thread waste (misc.)	.06– .07
Colored thread waste	.03– .04
Colored clips	.03– .04

CONVERTED RAYON WASTE

Bleached tops	$0.30–$0.32½
Unbleached tops	.27– .28
Bleached noils	.11
Unbleached noils	.09½
Bleached garnetts	.12
Unbleached garnetts	.13
Colored garnetts	.10– .11

Silk Waste

Kibizzo Kakai Grand XX	$0.50
Kibizzo Kakai Triple Extra	.44
Frison Grand Double	.49
Pierced Cocoons	.50

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